

HIV TESTING AMONG THE MSM GROUP IN BULGARIA



Results and Analysis



#endHIVbg

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SINGLE STEP FOUNDATION

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First edition

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LIST WITH ABBREVIATIONS

AIDS	Acquired Immune Deficiency Syndrome
ART	Antiretroviral Therapy
EASL	European Association for the Study of the Liver
GBD	Global Burden of Disease
GSK	GlaxoSmithKline
HBV	Hepatitis B Virus
HCV	Hepatitis C Virus
HIV	Human Immunodeficiency Virus
KABKIS	Cabinet for Anonymous and Free Counseling and Testing for HIV
LGBTI	Lesbian, Gay, Bisexual, Trans and Intersex
MH	Ministry of Health
MSM	Men who have Sex with Men
PrEP	Pre-Exposure Prophylaxis
PWUD	People who Use Drugs
RHI	Regional Health Inspectorate
SBALIPB	Specialized Hospital for Active Treatment of Infectious and Parasitic Diseases
STI	Sexually Transmitted Infections
TB	Tuberculosis
UNAIDS	United Nations AIDS Program
WHO	World Health Organization

Scientific Reviews

Scientific Review

Prof. Mira Kozhuharova, MD

The authors M. Baev, E. Naseva, I. Dimov, E. Patterson and M. Simonova introduce an analysis of the results from a questionnaire which accompanied the #endHIVbg pilot initiative which Single Step Foundation and partners executed. It focused on men who have sex with men (MSM) and trans people (a small proportion of all participants) and introduced free home tests for detecting HIV antibodies in the saliva.

Filling out an online questionnaire of 14 closed and semi-closed questions was required before ordering the test. A total of 1,574 MSM and trans people from 164 cities and villages in all 28 districts in Bulgaria participated in the survey, which covers the criteria for a nationally-representative survey among the MSM group in Bulgaria. Therefore, the collected data regarding age, gender, ethnicity, place of residence, condom usage, drugs consumption, personal HIV status awareness, screening for HIV, STIs and viral Hepatitis as well as the preferred method for HIV testing of the participants are representative for the MSM community in Bulgaria.

After performing the test, a second online questionnaire was introduced, which was filled out by 332 individuals who answered 3 questions related to the test and its results as well as provided an overall assessment of the entire process from ordering to testing. Of all people who reported their test results, 91.6% had a negative result, 4.9% had an invalid result and 3.5% reported a positive one.

The data from both questionnaires is analyzed accurately and multilaterally based on adequately applied statistical methods. Major conclusions are drawn which give the basis for specific recommendations for improving the management and control of HIV/AIDS, STIs and viral Hepatitis types B and C among at-risk groups in Bulgaria.

In conclusion, the importance of the introduced research and the in-depth analysis of the collected data is determined primarily by the fact that it is a community organization, and not the health administration, which has undertaken an examination of these very topical for the modern epidemiology diseases, which are subject of global and national strategies and plans for epidemiological control. As the authors rightly point out, this is the first-of-its-kind pilot model, organized and executed in such a specific manner “by the community for the community” on the territory of an entire country and this model can also be replicated in other countries. However, the results of the research are important and useful not only for the community for which the main messages are directed. This publication also has an important scientific and practical value for epidemiologists, infectious disease specialists and other public health professionals involved with the implementation of the national HIV and STI prevention and control program in Bulgaria.

There is also a need for up-to-date and accurate data about the incidence of HIV, STIs and viral Hepatitis types B and C in Bulgaria addressed at the broader general public, because every individual's awareness is a prerequisite for the understanding of the importance and necessity of screening of the above-mentioned diseases. This is especially true nowadays when possibilities for quick and easy screening and access to modern and adequate treatment, are constantly improving.

Sofia, 16 May, 2019

Prof. Mira Kozhuharova, MD

Scientific Review

Assoc. Prof. Desislava Vankova, MD

AIDS is not only a clinical challenge, but also a medico-social, moral and economic problem. In this regard, prevention is a financially beneficial method for addressing the devastating impact AIDS has on individuals and society. The campaign #endHIVbg for screening of HIV among the MSM and trans groups introduced in this monograph, is such a successful method of proactive secondary prophylaxis.

AIDS is related to a large extent to responsibility. The #endHIVbg campaign undertaken by Single Step Foundation and partners is a socially responsible project “from the community for the community” providing the opportunity for HIV screening in the MSM community which is the group most affected by HIV in Bulgaria.

AIDS as a diagnose is often synonymous with social stigma related to sexuality. The #endHIVbg project implemented between 29.09 – 30.11.2018 is a discrete and accessible method for HIV self-testing with oral fluid (saliva) and the free-of-charge OraQuick® individual kits. This explains the fact that the initiative was received with an overwhelming interest by the MSM community in Bulgaria.

The researchers’ team comprised of M. Baev, E. Naseva, I. Dimov, E. Patterson and M. Simonova allows us to learn about the motivation, methodology, results and analysis of this large-scale interventional research carried out as part of Single Step’s pilot initiative #endHIVbg. The studied population includes the MSM community and trans people (a small proportion of all respondents). The research methodology includes two questionnaires – one, before ordering the test for screening of antibodies for HIV in oral fluid and another one, after performing it. Over the course of the campaign, 900 free-of-charge OraQuick® testing kits were distributed to 120 different locations in all 28 districts of the country. The associated research covers 1,574 MSM and trans people from 164 different cities and villages, i.e. it meets the criteria for size of a national representative research among the MSM population.

The analysis of the results confirms the main hypothesis which drives this initiative, that there is a large number of MSM in Bulgaria who are sexually active, but do not test regularly for HIV and other STIs and at the same time do not use condoms regularly due to the prevailing stigma and ignorance on the topic in Bulgaria. This is the first-of-its-kind pilot model that provides for confidentiality in HIV testing at home, using only digital technologies as a marketing channel. Furthermore, the tested model has the potential to be not only an isolated experiment, but to be replicated in other countries with similar demographics and cultural characteristics.

The is not a single person, community, region or a country which is not affected by the AIDS virus. There is no doubt that the epidemiologic research introduced in the current monograph is a significant contribution to the regional and communal efforts in the fight for preventing and

limiting of AIDS. The #endHIVbg campaign is not only a large-scale humanitarian initiative in support of the MSM community, but also a successful scientific and research project, the results of which should be brought to the attention of the scientific community and the wider public as a whole.

Varna, 18 May, 2019

Assoc. Prof. Desislava Vankova, MD

The #endHIVbg campaign for HIV screening among the MSM group

At Single Step Foundation we believe that the future of the LGBTI (lesbian, gay, bisexual, trans and intersex) community is in the hands of the community itself, and it depends largely on us. This is also true when it comes to our health. The community of gay men and other men who have sex with men (MSM), regardless of whether they identify themselves as bisexual or heterosexual, is the group most affected by HIV in Bulgaria¹.

HIV testing services in Bulgaria are largely institutionalized, which is an obstacle for MSM and trans people who do not feel comfortable testing because of the prevailing stigma in the country. Testing for HIV is still often associated with sexuality.

In order to successfully manage the HIV epidemic in Bulgaria, which is highly concentrated in the MSM community, all stakeholders should promote both regular testing among MSM and safe sexual practices.

What we at Single Step Foundation undertook, together with our partners from Grindr for Equality, B2Y Productions, the National Patients' Organization, Saatchi & Saatchi, and Sexwell, supported by Gilead Sciences and GSK, was to conduct the large scale #endHIVbg initiative, from our community for our community. We offered MSM and trans people the opportunity to test for HIV completely for free, confidentially, in the comfort of their home, without having to visit a health center or meet anyone. We used the OraQuick® oral test approved by the US Food and Drug Administration and licensed for use in Europe. The test utilizes the method of detecting antibodies to the HIV virus in saliva; its application is easy, convenient and reliable – a swab is rubbed along the gums, then immersed into a reaction solution, and the result is available after 20 minutes.

We conducted the campaign between 29.09 – 30.11.2018 and it was met with great interest by the MSM and trans communities in the country. The HIV screening method utilizing a home oral test was the most appropriate way to avoid the stigma associated with HIV testing in public health centers where clients have to meet a doctor / consultant and a nurse in person.

In its essence, the campaign targeted MSM and trans people, the latter being a small fraction of all survey participants. However, they were considered separately in order to give this vulnerable group more visibility.

Over the course of the campaign we sent out 900 free OraQuick® kits for HIV self-testing with oral fluid (saliva) to 120 different locations in all 28 districts of the country; the accompanying online survey involved 1,574 MSM and trans people from 164 towns and villages which satisfies the volume criteria for a national representative population-specific study (MSM). To examine in more detail the population according to the

1. According to the HIV/AIDS Prevention and Control Program, 89% of all newly diagnosed cases of HIV are among men of whom 61% identify themselves as MSM.

location in which respondents live, we divided the locations into 4 types: (1) Sofia – capital, (2) a district city with KABKIS (Center for Anonymous and Free Consultation and Testing for HIV), (3) a district city without KABKIS and (4) other locations comprised of smaller municipalities and villages. The participants' risk practices and testing trends according to the type of location they are located in are analyzed as well.

Hypotheses of the study

- The main hypothesis that led us to developing the initiative was that there is a large number of MSM and trans people who are sexually active but do not test for HIV and other sexually transmitted infections (STIs) and who at the same time do not use condoms regularly because of the prevailing stigma and ignorance on this topic in Bulgaria.
- A large number of people living in locations where there is no HIV, Hepatitis and other STI testing and screening services do not know their status.
- Promoting home HIV testing (via Grindr, an online social networking app for gay, bi, trans and queer people) has a high potential to reach populations at risk who rarely or never get tested.
- The majority of respondents prefer to self-test for HIV at home rather than visiting a public health testing center or a mobile lab.

Methodology of the research

During the period between 29.09 – 30.11.2018, a survey was conducted among the clients who requested a free home HIV test. The primary data set for the study was collected through an online questionnaire hosted on Single Step's website that included closed and semi-closed questions. All data, regardless of the collection method (e.g. survey, phone line support) provided by participants, was solely collected and processed by Single Step in accordance to the legislative framework. A total of 1,574 respondents participated in the questionnaire before ordering the test, while the one completed afterwards had 332 responses. The first questionnaire consisted of 14 questions and the second of 3 questions. The answers of the respondents from the second questionnaire could not be connected with their answers to the first, in order to preserve the respondents' anonymity.

Statistical methods. The category variables are represented as an absolute number and a relative share. The single quantitative variable is not normally distributed (proved by a Kolmogorov-Smirnov test) and is presented as a median and a range (min-max); it is also categorized at intervals of equal width and half-open lower and upper limit. To search for correlation between category variables, a chi-squared test (Fisher's exact test in 2x2 tables) is applied for a two-sided critical area. When comparing age in different groups, non-parametric Mann-Whitney tests (for two groups) and Kruskal-Wallis (for more than 2 groups) were applied. Values of $p < 0.05$ are considered significant. Results marked with a star (*) show that the conditions for applying the chi-squared analysis are not satisfied and have exceeded the allowed number of cells in the table with expected frequencies below 5.

We believe that this is the **first-of-its-kind** pilot model, designed by a community organization, covering the territory of an entire country that allows for confidential HIV testing at home, using only digital technologies as a marketing channel. We also believe that this model can be replicated in other countries with similar demographics and other characteristics.

Executive summary

The HIV testing campaign and the accompanying survey hosted on Single Step's website, were promoted entirely online using advertisement through digital marketing channels (Grindr, Facebook, Instagram). An essential part was the partnership with Grindr, the world's largest social networking app for MSM, gay, bi, trans and queer people), with its thousands of active monthly users in Bulgaria. Over the course of the campaign, Single Step placed full screen notifications that would appear when users opened the Grindr app, as well as direct inbox messages within the app to all Grindr users in the country. Users were then prompted to order an HIV home test online by clicking on a button which led them to the Single Step website. Before ordering the home test, users had to first fill out a short eligibility assessment (to verify that they were 16+, had had sex with a man in the prior 12 months, that they were either HIV negative or did not know their status), then continued onto an online survey of 14 questions. After filling out the questionnaire on Single Step's website, users could place an order for the test free of charge, by providing a telephone number and a delivery address. The tests were completely free of charge to the end user, including the testing kit and shipping cost. Brochures with clear and visual instructions on how to perform the test and what to do after the test were included in the package.

A video was produced featuring members of our community and was used on social media platforms to promote the #endHIVbg pilot project.

Single Step set up a dedicated support phone line with access to Single Step's Sexual Health Manager, in case the result came out positive or if users had any questions or concerns. 12 positive results were reported on the dedicated support line, 10 of those were confirmed positive at a medical testing center.

All recipients of the oral HIV test were encouraged to fill out a follow up survey after they performed the test in order to collect data about their experience with the entire process from ordering to testing.



Promoted
on **Grindr**



#endHIVbg
Video



Phone line
for **support**

Total Click-Throughs: **5,717**
(Sept. 29 – Oct. 29, 2018)



3,851 (67%)



1,218 (21%)



648 (11%)



Click-Through to www.singlestep.bg

Participants in Pre-Order Online Survey:
1,574



Tests Ordered:
900

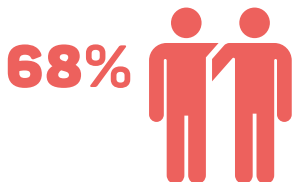


Participants in Post-Test Online Survey:
332

Summary results

The results from the online survey show that 53% of all respondents did not know their HIV status; 68% of those never or rarely use a condom. 31% of our target have never tested for HIV, 27% had tested more than one year prior, 14% had tested at some point during the prior 12 months, another 14% had tested in the prior 6 months and only 9% in the prior 3 months. When asked about the preferred method of testing, 71% prefer home HIV testing over traditional methods at centers or mobile labs (only 4% of the respondents preferred the latter method). A third of all respondents (34%) had never tested for other STIs, while only 15% did so in the prior year which leaves a large proportion of sexually active MSM at risk without regular screening for STIs. 38% of all respondents had never tested for Hepatitis while only 12% did so in the prior year.

The survey attracted participants from 164 different large and small cities and villages in all 28 districts in the country and is thus representative for the MSM community. This is by far the **largest survey** in the MSM community ever carried out in Bulgaria.



of MSM and trans people who live in smaller towns with no testing or screening services for HIV, Hepatitis and STIs are **not aware of their HIV status**.

When asked about condom usage practices and grouping the answers into two categories: “no + rarely” vs “often + always”, we see a clear trend towards a decrease in the usage of condoms relative to the size of a town or city a respondent is from. For example, in the capital city of Sofia

four out of five respondents (78%) answered “often” or “always”, compared to only 60% of respondents living in the smallest towns and villages.

Another important correlation is between condom usage and the usage of drugs. Respondents who use condoms more frequently, more often declare that they do not use drugs, have tested more recently for HIV, STIs and Hepatitis. Respondents who often or always use a condom state more frequently that they had tested for HIV at some point in their life (74%) vs the group of those who rarely or never use a condom (57%).

The frequency of HIV testing by types of geographical locations shows alarming results. The proportion of respondents who have never tested for HIV living in the capital is 24%, compared to those in district cities with a testing center (33%) and to those living in the smallest towns (45%).



Conclusions

- Screening and testing services outside of Sofia are inaccessible as evidenced by the number of people who have never or rarely tested for HIV, STIs and Hepatitis.
- Mobile labs are one of the least preferred places/ methods for HIV testing.
- Utilizing home oral fluid self-testing kits is the most effective way for screening for the hard-to-reach MSM and trans populations in Bulgaria.
- MSM in the Roma community represent the most vulnerable group – they are the smallest proportion of those who use condoms and are the ones who most rarely know their HIV status.
- There is a need for psychological and psycho-social support in all HIV treatment units for the newly diagnosed with HIV especially in the critical phase immediately after finding out the result.
- People who use drugs are less likely to use condoms.
- Condoms are not popular among many fractions within the MSM community, thus innovative methods of prevention, such as PrEP (Pre-exposure Prophylaxis), need to be introduced but only accompanied by a robust awareness campaign that addresses all the prevalent misperceptions about PrEP.
- All HIV positive individuals identified as part of the campaign are under 30 y.o., predominantly under 25, while the youngest is 18.
- Nearly half of the respondents have never tested for Hepatitis.
- Only less than 15% have tested for HIV, STIs and Hepatitis in the past 6 months.
- Digital channels are the most effective way to reach the MSM and trans communities.
- The trans community is particularly vulnerable to HIV and other STIs; more than half rarely or never use condoms and report drug usage more frequently.
- MSM in bigger cities are more likely to use condoms compared to the ones in smaller locations.

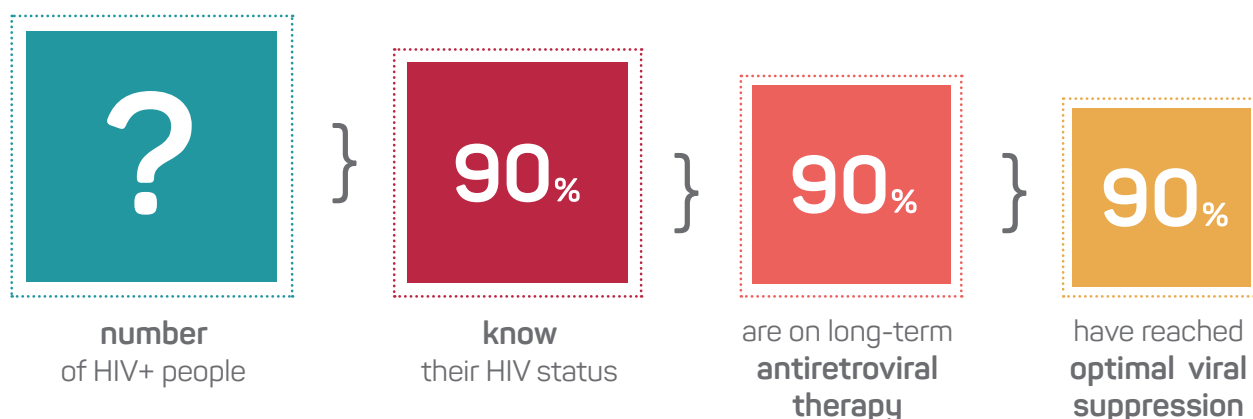


Recommendations

- Targeted and innovative approaches for prevention and screening in the MSM community are needed because the HIV epidemic is concentrated in this at-risk group. Prevention approaches need to be tailored to the specifics of the community, i.e. allowing for confidentiality and anonymity when accessing services as well as utilizing digital channels due to the nature of communication between MSM. Grindr (or another similar digital app) is the most targeted channel to reach the MSM community in Bulgaria.
- The national HIV Prevention and Control Program needs to invest in broadening the screening services and methods, i.e. introducing home oral fluid self-testing kits as a viable and sustainable testing method, as currently they are largely inaccessible especially in geographical areas without testing services.
- Changes in the legal framework regulating HIV testing in Bulgaria are needed, including, but not limited to, the National HIV/AIDS Prevention and Control Program and Ordinance 47 from 11.12.2009 of the Minister of Health and respective methodological documents and guidelines concerning HIV/AIDS.
- A PrEP trial group should be introduced for research purposes to allow for evidence-based approaches on a national level that would pave the way to providing accessible and affordable PrEP.
- Introduction of integrated health services for patients with HIV, including support by a psychotherapist and opportunity for treatment of other non-HIV-related health conditions that a patient might have.
- Further research focused on the sexual health needs of the most vulnerable groups of the LGBTI community (e.g. trans and Roma people) is needed.
- Efforts in screening for STIs and Hepatitis need to be scaled up together with the screening for HIV.

Context of the study and the campaign – HIV in Bulgaria

In recent years, health authorities have alluded that Bulgaria has reached the UNAIDS goals, known as 90-90-90 (90% of HIV-positive people to know their HIV status, 90% of all people diagnosed with HIV are on long-term antiretroviral therapy (ART) and 90% of all receiving ART have reached optimal viral suppression)². Nevertheless, we believe that the real situation is different because of the lack of clarity about the size of the most-at-risk group – MSM and respectively the unclear number of HIV-positive individuals in Bulgaria. Our team claims that a significant proportion of MSM probably do not know their HIV status, as the survey data within the #endHIVbg campaign shows. With this study and its accompanying initiatives, we would like to start a dialogue with experts and national institutions on how **Bulgaria can become a world leader in achieving the 90-90-90 UN goals.**



The prevention and control of HIV/AIDS in Bulgaria are regulated in various legal documents and the main programming document is the current National Program for Prevention and Control of HIV and Sexually Transmitted Infections in the Republic of Bulgaria 2017-2020. This program builds on the results achieved in the implementation of the last two national programs in the period 2001-2007 and 2008-2015, which were supported by the implementation of the program “Prevention and Control of HIV/AIDS” financed by the Global Fund to Fight against AIDS, Tuberculosis and Malaria in the period 2004-2014.

The objectives of the current National Program for Prevention and Control of HIV and STIs in the Republic of Bulgaria 2017-2020 are in line with the global tasks set by the World Health Organization through the Global Strategy of the World Health Organization for the Prevention and Control of HIV (2016-2021); the World Health Organization Global Strategy for the Prevention and Control of STI (2016-2021); Long-term surveillance

2. 90-90-90 An ambitious treatment target to help end the AIDS epidemic, UNAIDS, <http://www.unaids.org/en/resources/909090>

strategy in the European Union (2014-2020) of the European Center for Disease Control and of UNAIDS.

The National Program uses an integrated and balanced approach and includes comprehensive services on prevention, diagnosis, treatment, care and support. It is based on experience and evidence-based activities; focusing on services geared to the specific needs of the target groups as well as increasing and expanding the range of high quality services.

At this stage, it is difficult to determine the exact size of the MSM group in the country, on one hand because of the lack of in-depth research, and on the other, because of the stigma surrounding sexual orientation and the pressure for MSM to hide it. Some experts point out that the size of the MSM group is about 3% of the male population in the country, resulting in approximately 60,000 people³.

The registered cases of HIV by March 22, 2019 in Bulgaria are 3,071 people, of which 1,519 are under the supervision of specialists in the five HIV treatment sectors in Bulgaria. Of those, receiving ART as of 31 December 2018, are 1,445 people, as can be seen from the sector breakdown in the table below (Figure 1). The percentage distribution of registered HIV positive people in 2018 by gender is: men – 89% and women – only 11%. In 2018 alone, the number of newly registered HIV cases in Bulgaria is 311, of which 276 are men and 35 are women. Of the newly registered men, 54% confirm homosexual contact as a mode of transmission, and 33% declare a heterosexual one⁴. We believe that because of the prevailing stigma in the country, the latter percentage is unrealistically high.

Figure 1.

Number of people in HIV/AIDS treatment sectors in Bulgaria in the period 01.01.2018 – 31.12.2018.

Healthcare facility	Number of people with HIV/AIDS monitored as of 31.12.2018	Number of people with HIV/AIDS receiving ART as of 31.12.2018	Total number of people at HIV sectors as of 31.12.2018
Specialized Hospital for Active Treatment of Infectious and Parasitic Diseases „Prof. Ivan Kirov” – Sofia	48	1,018	1,066
University multi-profile Hospital for Active Treatment „St. Georgi” – Plovdiv	15	195	210
University multi-profile Hospital for Active Treatment „St. Marina” – Varna	7	171	178
University multi-profile Hospital for Active Treatment „Dr. Kirkovich” – Stara Zagora	0	30	30
University multi-profile Hospital for Active Treatment „Dr. Georgi Stranski” – Pleven	4	31	35
TOTAL	74	1,445	1,519

3. Prevention of HIV and TB in Sofia and Bulgaria – evaluation of the situation, Naseva, E., Sofia 2017

4. According to data of HIV/AIDS Prevention and control Program

HIV testing in Bulgaria

HIV testing is regulated in Ordinance 47 of the Minister of Health from 11.12.2009 on the conditions and procedures for testing and reporting of the AIDS virus infection, which stipulates the procedure for confirming the positive result⁵.

In order to manage the HIV epidemic, a network of 14 so-called KABKIS and 17 mobile testing units were established. The checkpoints are located in district centers in the Regional Health Inspection (RHI) buildings. These centers are the only alternative for anonymous and free HIV testing in most cities. An impediment for many members of the target group is the fact that the centers are located in a state institution, where an ID and the purpose of visit are required for entry, although the testing itself is anonymous. In practice, there are no convenient community services for testing of HIV or other STIs, except for the only non-institutional testing center – Checkpoint in Sofia.

Viral Hepatitis B and C

Hepatitis B (HBV) and C (HCV) infections are a global health problem and are among the main causes for the development of liver cirrhosis and liver cancer worldwide. There has been a sustained increase in hepatic mortality associated with HCV and HBV infections over the past 15 years and at this stage the associated mortality globally exceeds the mortality rate associated with the HIV, tuberculosis and malaria infections⁶. This alarming data, coupled with the presence of antiviral drugs that can cure HCV infection and effectively suppress HBV infection and thus, prevent the development of hepatic complications, as well as the possibility of preventing HBV infection by an anti-HBV vaccine, are the reasons for the WHO to recognize viral Hepatitis as a global health problem and to adopt the Global Strategy for the Eradication of Viral Hepatitis by 2030.⁷ WHO's specific strategic objectives are: 80% reduction of new infections, 80% of chronically infected individuals put on ARV treatment and 65% reduction in mortality due to viral Hepatitis infections, by 2030.⁸



Hepatitis B (HBV) and C (HCV) infections are a global health problem and are among the main causes for the development of **liver cirrhosis and liver cancer** worldwide.

5. Ordinance 47 from 11.12.2009 on the conditions and procedure for testing, annunciation and reporting of AIDS virus infection. Gaz., ed. 103/29.12.2009

6. GBD, 2013, Mortality and causes of deaths study, Lancet 2014

7. WHO Global Health Sector Strategy on Viral Hepatitis 2016–2021;
Available at: <http://www.who.int/hepatitis/strategy2016-2021/ghss-hep/en>

8. WHO Global Health Sector Strategy on Viral Hepatitis 2016–2021;
Available at: <http://www.who.int/hepatitis/strategy2016-2021/ghss-hep/en>

Trans people in the study

The population of the trans community in Bulgaria is estimated to be 8,540⁹ as of 2017. In our study, 39 (2.5%) participants identified as trans. All of these trans respondents reported that they had sex with a man in the last 12 months. More than half (56.4%) of trans respondents reported rarely or never using a condom and had more than twice the rate of drug use of MSM in the study (35.9% vs 13.2%). In the study overall, trans people were at higher risk of HIV and less likely to know their current HIV or STI status than MSM.

Impact of HIV in global trans communities

These study findings support global research of the impact of HIV on trans people. While cisgender MSM (MSM who were assigned male at birth) have historically and contemporarily faced the burden of HIV infection, research shows that trans people are impacted by HIV at higher rates. Of those in the trans community, researchers have documented the most data on how HIV impacts the lives of trans women. A 2013 foundational, international review and meta-analysis of studies focused on trans women and HIV documented that trans women, specifically, are 49 times more at risk of HIV than the general population¹⁰. This estimate far exceeds the rates of MSM, cisgender and heterosexual people in the general population living with HIV globally¹¹. HIV particularly impacts low-income trans women who are ethnoracial minorities, experience interpersonal violence, social and legal exclusion, and economic disempowerment, which increase HIV risk behaviors such as having condomless sex and engaging in sex work¹². Researchers have also historically misidentified trans women in HIV research studies as MSM, which ignores the psychosocial, political, and structural realities that impact trans women in different and often more violent ways than cisgender MSM.

Trans men are hidden in plain sight or outright excluded from the majority of HIV studies. Multiple small cohort studies predominantly in the U.S. and Western Europe demonstrate that trans men are having sex with cisgender men and many are having condomless sex which elevates their HIV risk. Research related to HIV risk often assumes that trans men identify as heterosexual, engage in sexual behaviors solely with cis women, and, subsequently, have similar transmission risk to cisgender women who have sex with cisgender women¹³. However, the vast majority of trans men

9. UNAIDS. (2017). Bulgaria. Retrieved from <http://www.unaids.org/en/regionscountries/countries/bulgaria>.6. GBD, 2013, Mortality and causes of deaths study, Lancet 2014

10. Baral et al. Worldwide burden of HIV in transgender women: a systematic review and meta-analysis. *The Lancet Infectious Diseases* 13(3): 214-22. Retrieved from <https://www.ncbi.nlm.nih.gov/pubmed/23260128>

11. Lippman et al.(2016). Acceptability and Feasibility of HIV Self-Testing Among Transgender Women in San Francisco: A Mixed Methods Pilot Study. *AIDS and Behavior* 20(4): 928-938. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4799740/>

12. AVERT.org. Transgender people, HIV and AIDS. (2018, April 16). Retrieved May 9, 2019, from https://www.avert.org/professionals/hiv-social-issues/key-affected-populations/transgender#footnote1_1oialjj

13. Reisner et al. (2015). Syndemics and gender affirmation: HIV sexual risk in female-to-male trans masculine adults reporting sexual contact with cisgender males. *International Journal of STD & AIDS* 0(0), 1-12. doi:10.1177/0956462415602418

identify their sexual orientation as not heterosexual and engage in sexual behaviors with cisgender male partners. A U.S. study of trans masculine adults found that 93.1% of participants identified as a sexual orientation other than heterosexual, with 57.2% identifying as queer and 10.4% identifying as bisexual¹⁴. Condomless sex particularly puts trans men at risk, with one U.S. study finding that only 31% of trans MSM reported “always” using a condom during vaginal/frontal sex and only 40% reported “always” using a condom during anal sex¹⁵.

Finally, the impact of HIV on non-binary people—those who do not identify as women or men—is largely understudied as research studies do not capture non-binary gender identities.



Leveraging HIV Self-Testing for Trans Communities

Because trans people face the global burden of HIV risk as well as barriers to HIV and STI services, finding alternatives to clinical testing settings, like HIV home-testing programs, is necessary. Experiences and fear of discrimination and violence can adversely impact trans people’s willingness to get tested in a public setting. Trans people overwhelmingly report being denied equal treatment in clinical settings and even face verbal harassment and physical violence from health care providers¹⁶. For trans people who belong to more than one marginalized group, fears of discrimination go beyond just their gender identity. An intersectionality study of trans women belonging to ethnoracial minority groups found that those who experienced verbal harassment attributed to their race/ethnicity were more likely to never have been tested for HIV than other trans women in the study who attributed their experiences of discrimination to their gender and class¹⁷.

Limited pilot studies of home testing programs have noted that this method of testing is particularly impactful for high-risk groups who distrust medical systems and face barriers to accessing health care generally, including trans people, MSM, and ethnoracial minorities. Only one pilot study has tested the feasibility of HIV self-test kits specifically among trans people. In 2013, researchers conducted an HIV self-test pilot program among 11 trans women in San Francisco, California. They found that having an option to self-test for HIV offers a necessary alternative to trans people who experience discrimination and violence in clinical settings¹⁸. The primary concerns among self-testers in this study highlight the structural inequalities trans people face. One is financial; participants noted that they might not use HIV self-test kits if they are not free and noted that other financial burdens of accessing clinical testing, from transportation to taking time off of work, necessitate that HIV self-test programs should provide

14. Ibid

15. Sevelius, J.M. (2009). “There’s no pamphlet for the kind of sex I have’: HIV-related risk factors and protective behaviors among transgender men who have sex with nontransgender men. *Journal of the Association of Nurses in AIDS Care*, 20(5), 398-410. doi:10.1016/j.jana.2009.06.001

16. James et al. (2016). The report of the 2015 U.S. Transgender Survey. Washington, DC. Retrieved from <http://www.ustranssurvey.org/report>

17. Aguayo-Romero, R.A. (2019) Intersection of Transmisogyny, Racism, and Classism, and HIV Testing Patterns among Transgender Women of Color (Unpublished doctoral dissertation)

18. Lippman et al.(2016)

tests for no cost to participants to encourage testing¹⁹. Additionally, trans women in the study endorsed HIV self-testing as their preferred method as it mitigates their fears of health care provider mistreatment and privacy concerns²⁰.

Two HIV self-test pilot studies included trans people with cisgender MSM. In both of these studies, data on trans respondents was not disaggregated between trans from data on MSM respondents making trans-specific results unclear. In 2015, researchers conducted a randomized trial in Myanmar of MSM and trans women to determine acceptability of receiving HIV testing and counseling at a community-based organization or HIV self-testing. Eighty-eight trans women (15.3%) participated in the study²¹. All study participants who were randomized into the self-testing group overwhelmingly endorsed the method, saying it was easy (99%), convenient (98%), had trustworthy results (99%), and that they would test more often if they had access to a self-testing kit (94%)²². Ninety-nine percent (99%) of those in the self-testing cohort said they would recommend this method to a partner, friend, or family member²³. The New York City Department of Health and Mental Hygiene's HIV self-test giveaway through dating applications and websites found similar acceptability, with 98% of all study participants said they would recommend self-testing to a friend²⁴.

What these three pilot programs demonstrate is that HIV self-testing programs reduce many of the barriers that prevent trans people from testing in traditionally clinic or community-based settings and promote HIV testing. These methods have high acceptability among trans people as an easy and convenient alternative to other types of setting-specific HIV testing.



Note on Study Language

While we had a cohort of trans people in the study, we were not able to statistically compare this cohort with the cisgender MSM. When we discuss study results in the following sections, we want to clarify that we are only talking about cisgender MSM. We will specifically note when we are addressing data related to trans respondents. We want to ensure readers of this report that we are not conflating cisgender MSM with trans people of all genders who participated in this study.

19. Ibid

20. Ibid

21. Wirtz et al. (2018). HIV self-testing among men who have sex with men and transgender women in Myanmar. 25th Conference on Retroviruses and Opportunistic Infections (CROI 2018), Boston, abstract 994, 2018. Retrieved from <http://www.croiconference.org/sessions/hiv-self-testing-among-men-who-have-sex-men-and-transgender-women-myanmar>

22. Ibid

23. Ibid

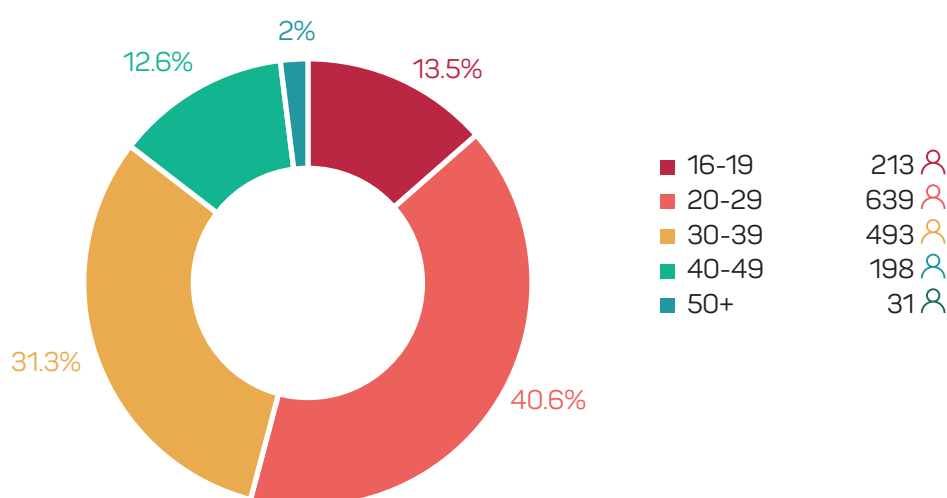
24. Edelstein et al. (2017). Feasibility and Reach of a HIV Self-Test (HIVST) Giveaway, New York City, 2015-16. 24th Conference on Retroviruses and Opportunistic Infections (CROI 2017), Seattle, abstract 898, 2017. Retrieved from <https://www1.nyc.gov/assets/doh/downloads/pdf/dires/hiv-self-test-giveaway.pdf>

Online questionnaire before ordering the test

Common characteristic of the participants

All 1,574 participants in the online questionnaire before ordering the test as part of the #endHIVbg campaign confirmed that they had sex with a man in the past 12 months. Their median age is 29 (min – 16, max – 62). The majority of them are 20-29 (40.6%), followed by those aged 30-39 (31.3%) with almost the same proportion of both the youngest (16-19) and older (40-49). The share of people over 50 is insignificant (Figure 2).

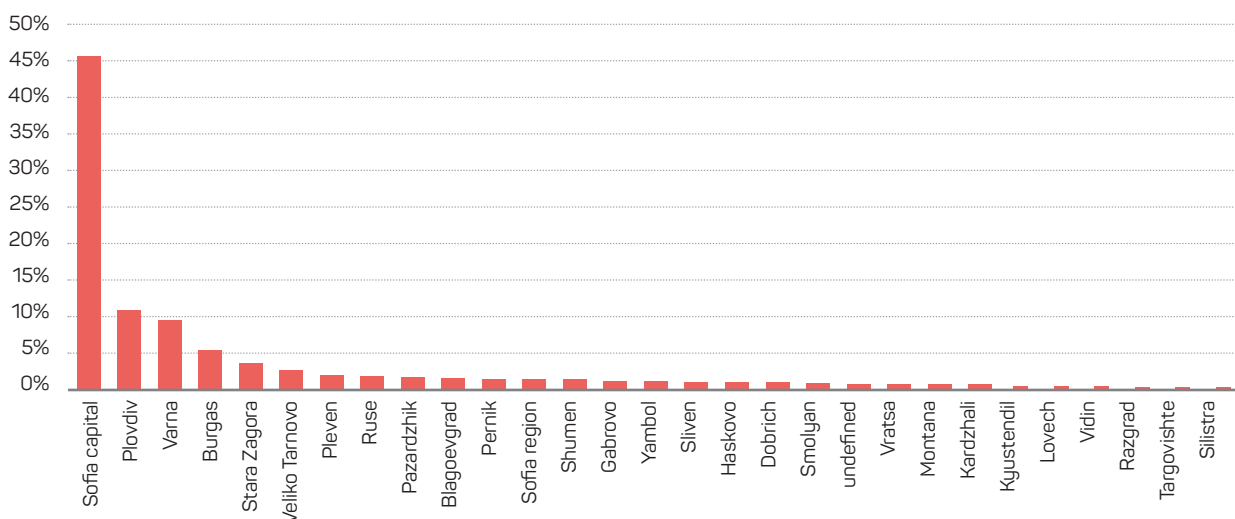
Figure 2.
Distribution of the respondents by **age** (relative share; absolute number)



Almost all participants (97.5%) declared that their gender is male, while the remaining 2.5% are trans.

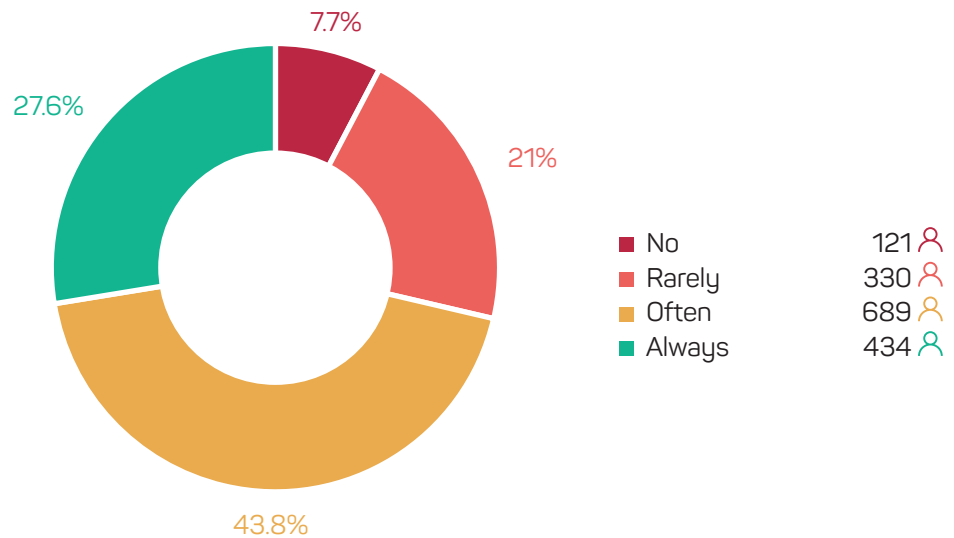
Figure 3.
Distribution of respondents by **area** of residence (relative share)

Two-thirds of respondents are concentrated in 3 districts; nearly half (45.6%) are from the Sofia-city region, 10.9% from the Plovdiv district, 9.5% from the Varna district, 5.4% from the Burgas district, 3.6% from the district of Stara Zagora, 2.0% of the Pleven district and the rest – from other regions. No detailed breakdown by exact locations has been made in order to preserve the anonymity of the participants.



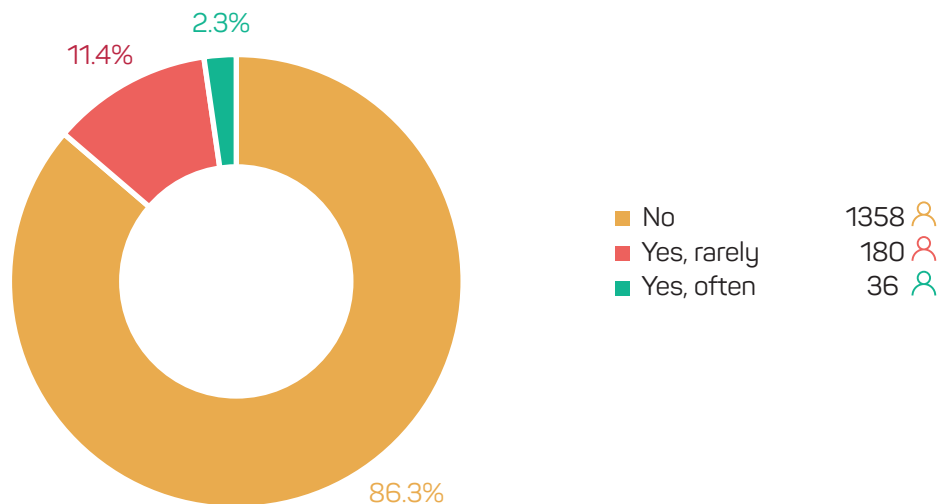
To the question “Do you use a condom when having sex?”, the majority of respondents (43.8%) responded with “often”; only 27.6% said they always do; every fifth (21.0%) rarely uses a condom and 7.7% never use a condom (Figure 4).

Figure 4.
Distribution of respondents according to their answers to the question “Do you use a condom when you have sex?” (relative share; absolute number)



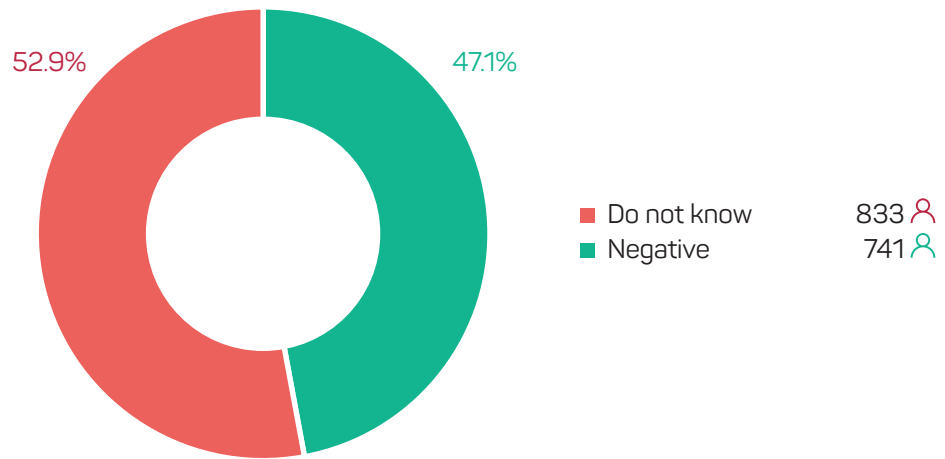
More than 4/5 of the respondents (86.3%) declared that they did not use drugs, while slightly more than every tenth (11.4%) reported that they did so rarely and 2.3% did so often (Figure 5).

Figure 5.
Distribution of respondents according to their answers to the question “Do you use drugs?” (relative share; absolute number)



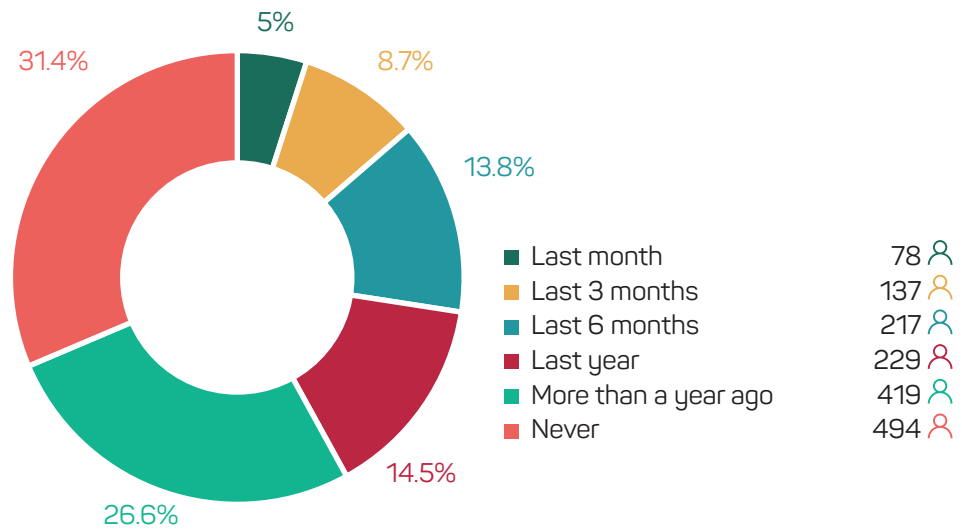
The HIV status self-declared by the participants before testing with the OraQuick® home kit is negative for half of them (47.1%), while the other half (52.9%) do not know it – either because they did not obtain a previous result or because they have never been tested (Figure 6).

Figure 6.
Distribution of respondents according to their **HIV status** (relative share; absolute number)



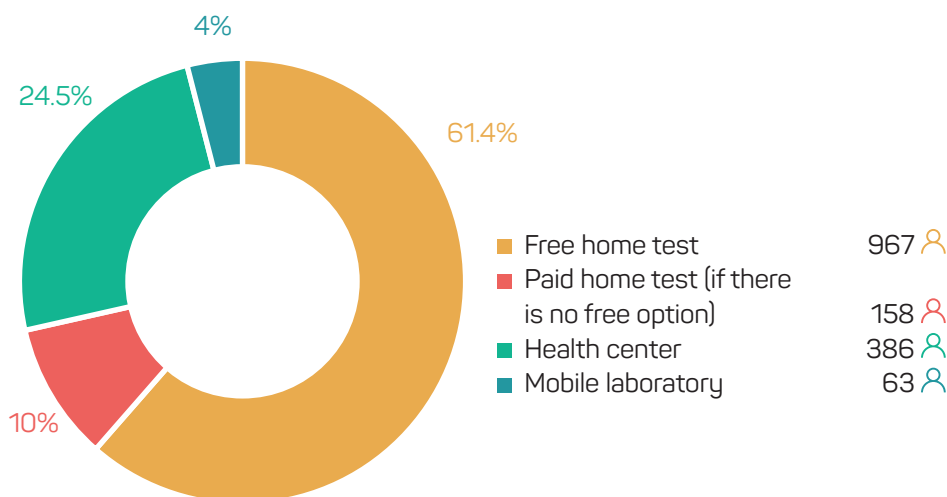
It is interesting to note when the respondents last tested for HIV. Every third (31.4%) has never tested, 26.6% tested more than a year ago, 14.5% – 6-12 months ago, 13.8% – during the last 6 months, 8.7% – in the last 3 months, and only 5.0% – during the last month (Figure 7).

Figure 7.
Distribution of respondents according to their responses to the question **“When did you last test for HIV?”** (relative share; absolute number)



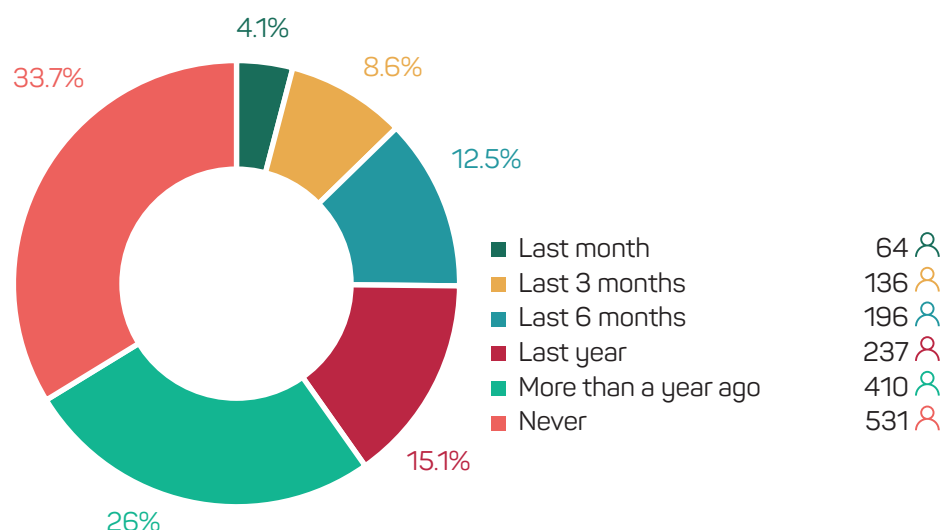
The most preferred HIV testing method is a free home test, indicated by 61.4% of the participants. The second most preferred method is testing at a health center (24.5%), every tenth (10.0%) preferred a paid home test provided that a free home test option is not available, and 4.0% prefer a mobile lab (Figure 8).

Figure 8.
Distribution of respondents according to their answers to the question “Which method for HIV testing would you choose?” (relative share; absolute number)



One in three respondents (33.7%) has never tested for STIs other than HIV, and every fourth (26.0%) has had such tests more than a year ago, 15.1% in the last year, 12.5% in the last 6 months, 8.6% in the last 3 months, and 4.1% in the last month (Figure 9). The results for recent Hepatitis tests are very similar (Figure 10).

Figure 9.
Distribution of respondents according to their answers to the question “When did you last test for STIs (except HIV)?” (relative share; absolute number)



Viral hepatitis B and C in Bulgaria

Chronic HCV-infected individuals in Bulgaria are approximately 91,000 (1.28% incidence of HCV infection) and approximately 230,000 are HBV-infected people (3.28% HBV infection rate)²⁵. This data is from a multicenter, serological study of the incidence of HBV and HCV in Bulgaria carried out in 1999-2000. No additional relevant data on the prevalence

25. Petrunov B, M Kojouharova, P Teoharov et al. EU project Interreg II: Seroepidemiology study on Hepatitis C and B viral infections prevalence in Bulgaria and Northern Greece. Abstracts, 37th Annual Meeting of EASL, 2002, Madrid, Spain, Journal of Hepatology, V 36, Suppl 1, April 2002, 138-139

of viral Hepatitis among the general population in the country is available at this stage. Risk groups for the spread of chronic viral Hepatitis include people exposed to risky blood-transmitted infections and those with risky behavior to acquire blood-transmitted infections. Populations with risk exposure to viral Hepatitis have: received blood or blood products before 1991, organ transplantation performed before 1991, hemodialysis patients, infants born to mothers infected with viral Hepatitis. At-risk populations for viral Hepatitis are: People who Inject Drugs (IDUs), co-infected with HIV, MSM, prisoners, people offering sexual services. HBV, besides blood-transmitted, has a sexual transmission path as well as a vertical transmission as a mother-to-child infection. Unlike the lack of adequate data on the prevalence of chronic viral Hepatitis in the general population, there is data on the prevalence of viral Hepatitis among risky-behavior groups collected in 2004-2012 by the Ministry of Health under the HIV/AIDS Prevention and Control Program, funded by the Global Fund to Fight AIDS, Tuberculosis and Malaria in the period 2004-2014. According to the official reports from the integrated survey, the HCV and HBV rates among the risky populations are many times higher than in the general population and namely:

HCV and HBV Rates Among Risky Populations^{26 27 28 29 30}

Risk Group	Range		Period
	HCV	HBV	
IDUs	65.1% – 78.6%	8.2% – 9.8%	2004 – 2012
MSM	3.8% – 6.6%	4.0% – 10.6%	2006 – 2012
Prisoners	14.0% – 26.0%	10.0% – 14.0%	2006 – 2011
Sex workers	5.0%	7.0%	2004 – 2012
Roma	12.4%	16.7%	2005 – 2012

In Bulgaria, all antiviral medications for treatment of HCV and HBV infections are registered for prescription and the treatment of chronic viral Hepatitis is fully covered by the National Health Insurance Fund for all people with health insurance. However, the data shows that the diagnostic and therapeutic levels in the country are low. 20% of HCV-infected patients were diagnosed and only about 2% of them were enrolled in therapy³¹. There is no data showing either how many people

26. Varleva T and co – authors, Report from conducted integrated biological and behavioral surveillance for HIV among PWUD in the period 2005-2012 r., MH, Program, financed by the Global Fund to fight AIDS, tuberculosis and malaria, Sofia, 2015

27. Varleva T and co-authors, Report from conducted integrated biological and behavioral surveillance for HIV among sexworkers in the period 2004-2012 r., MH, Program, financed by the Global Fund to fight AIDS, tuberculosis and malaria, Sofia, 2015

28. Varleva T and co-authors, Report from conducted integrated biological and behavioral surveillance for HIV among MSM in the period 2006-2012, MH, Program, financed by the Global Fund to fight AIDS, tuberculosis and malaria, Sofia, 2015

29. Varleva T and co-authors, Report from conducted integrated biological and behavioral surveillance for HIV among men 18-25 in Roma community in the period 2005-2012, MH, Program, financed by the Global Fund to fight AIDS, tuberculosis and malaria, Sofia, 2015

30. Varleva T and co-authors, Report from conducted integrated biological and behavioral surveillance for HIV among prisoners in the period 2006-2011., MH, Program, financed by the Global Fund to fight AIDS, tuberculosis and malaria, Sofia, 2015

31. Papatheodoridis GB, et al. J Viral Hepat 2018;25:6-17

in risky populations are on antiviral treatment or can not get antiviral treatment because they are uninsured. Currently, in Bulgaria there are no other funding sources except for the National Health Insurance Fund to cover antiviral treatment, which means that all people without health insurance have no access to treatment and can not be treated.

At this stage, there is still no national strategy or plan to eliminate chronic viral Hepatitis in Bulgaria, as per the WHO strategy for global elimination of viral Hepatitis by 2030.

The lack of current data on the incidence of HCV and HBV infections in Bulgaria does not allow for adequate assessment of the severity of the disease and for objective predictions of the required diagnostic and therapeutic levels leading to the elimination of chronic viral Hepatitis by 2030.

Diagnostic and therapeutic levels in the country assessed on the basis of existing epidemiological data are low and as a result, the goals of eliminating HCV infection will not be met. A national plan, strategy and budget for eliminating the HCV infection based on the current epidemiological situation is required.

Figure 10.
Distribution of respondents according to their answers to the question **“When did you last test for Hepatitis”** (relative share; absolute number)

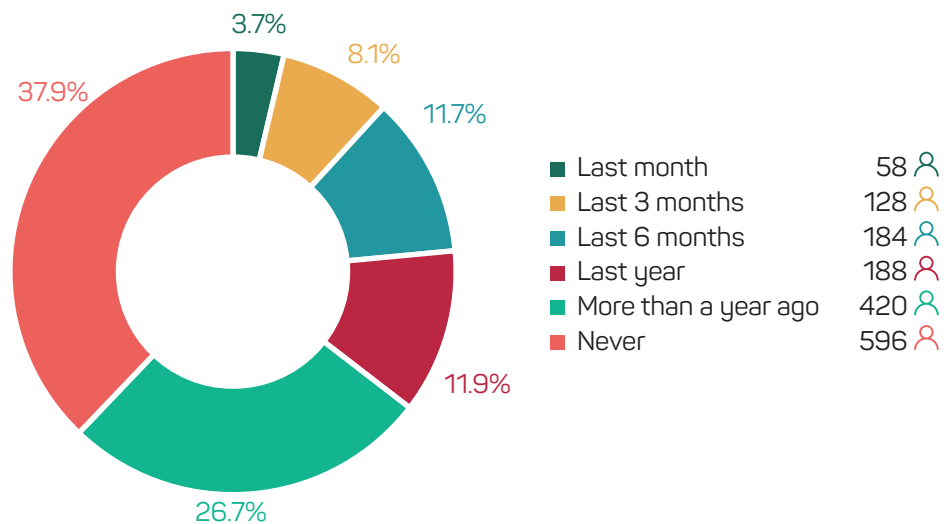


Figure 11.
Distribution of respondents according to whether they have ever tested for **HIV, STIs and Hepatitis** (relative share)

■ Have never tested
■ Have tested at some point

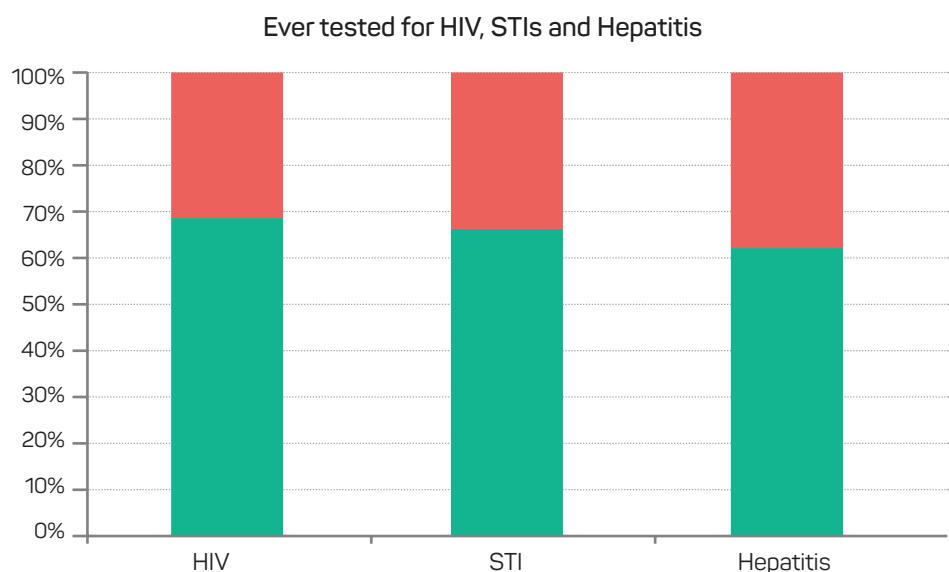
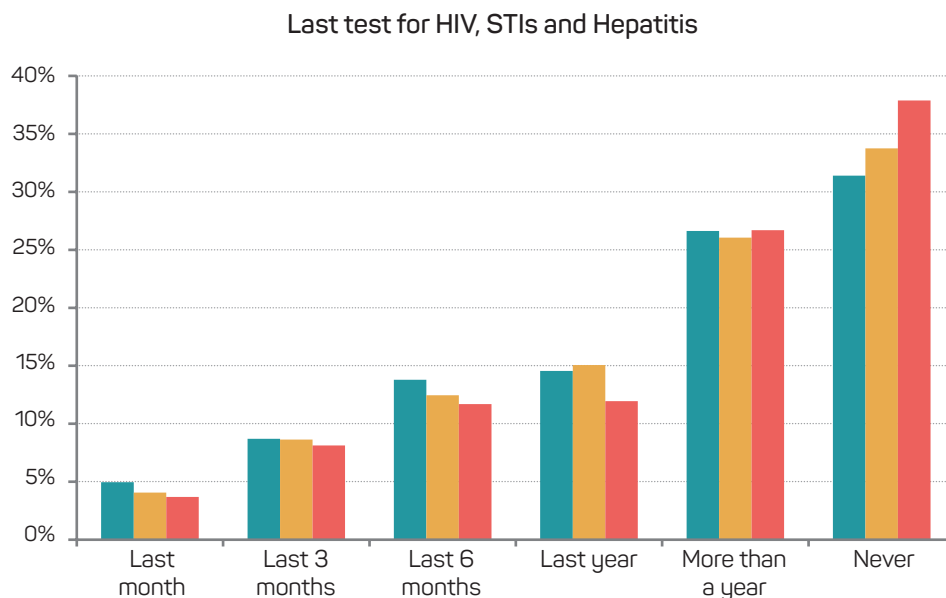


Figure 12.

Comparative distribution of participants according to the time of their last **HIV, STI and Hepatitis** test (relative share)

- HIV
- STI
- Hepatitis

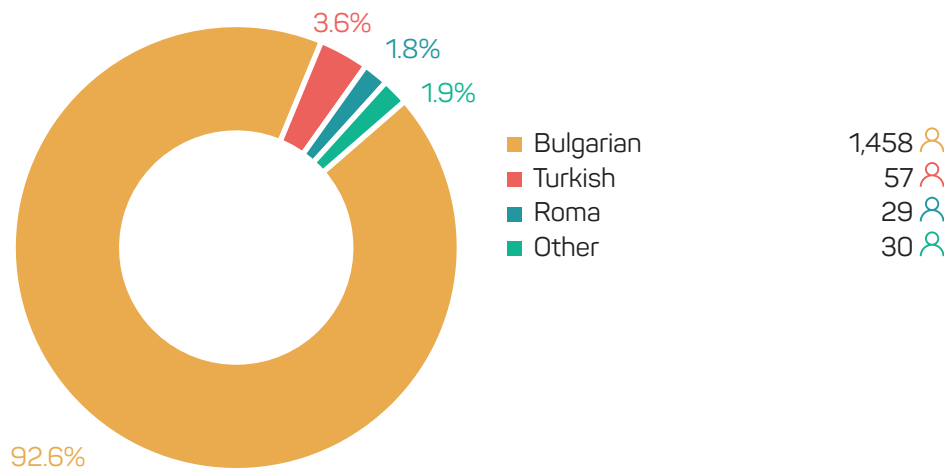


The majority of participants (92.6%) are ethnic Bulgarians, 3.6% identify themselves as Turkish, 1.8% as Roma, and the other 1.9% – as other ethnicity (Figure 13).

Ethnicity of respondents

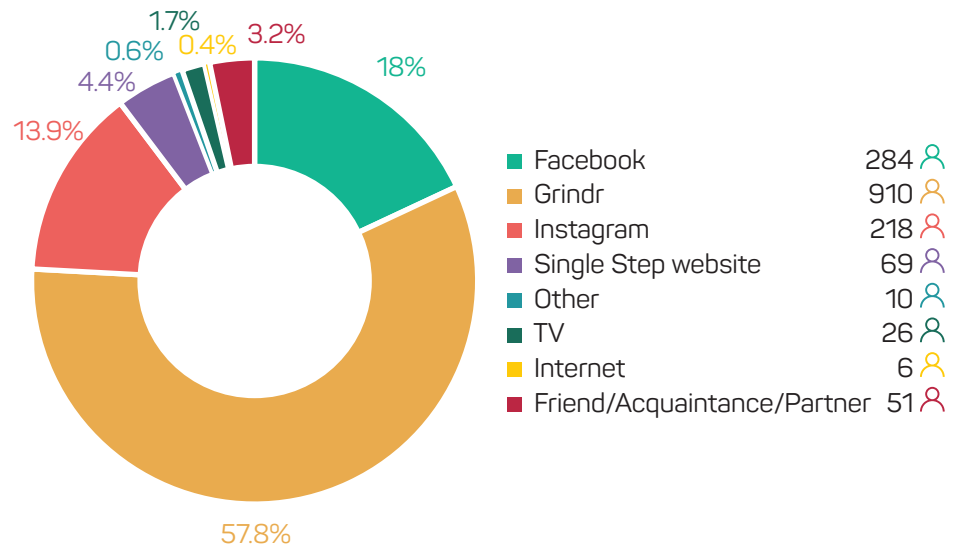
Figure 13.

Distribution of respondents according to their **ethnicity** (relative share; absolute number)



The last question in the short questionnaire is, “How did you learn about this campaign?” The largest share of respondents found out from Grindr – 57.8%. In second place is Facebook with 18.0%, and in third – Instagram with 13.9%. The results show that digital and online channels are the most effective way to reach our target group of MSM and trans people.

Figure 14.
Distribution of respondents by their responses to the question **“How did you learn about this campaign?”** (relative share; absolute number)



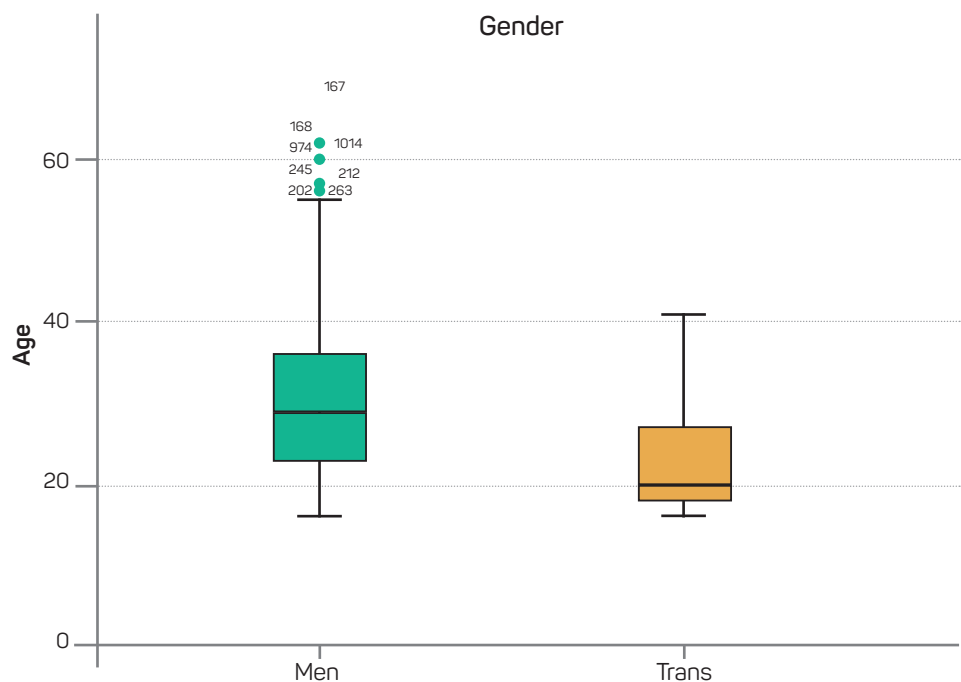
“In Depth” Analysis

The following section considers two-variable correlations.

■ By current gender

The median age of both groups is significantly different ($p < 0.001$). Men are older (median age of 29), while trans people are significantly younger overall (20 years).

Figure 15.
Age “Box plot” graph among the two groups of people according to **their gender**



There are some significant differences between the two groups analyzed by gender. Such is the correlation between the question “Do you use a condom when you have sex?” and the gender of the respondent. The responses to the question are also grouped, with a stronger and more explicit correlation in uniting “not + rarely” vs “often + always” compared to “always” vs “no + rarely + often” (Figure 16, 17). It can be concluded that men declare more frequent use of condoms than trans people.

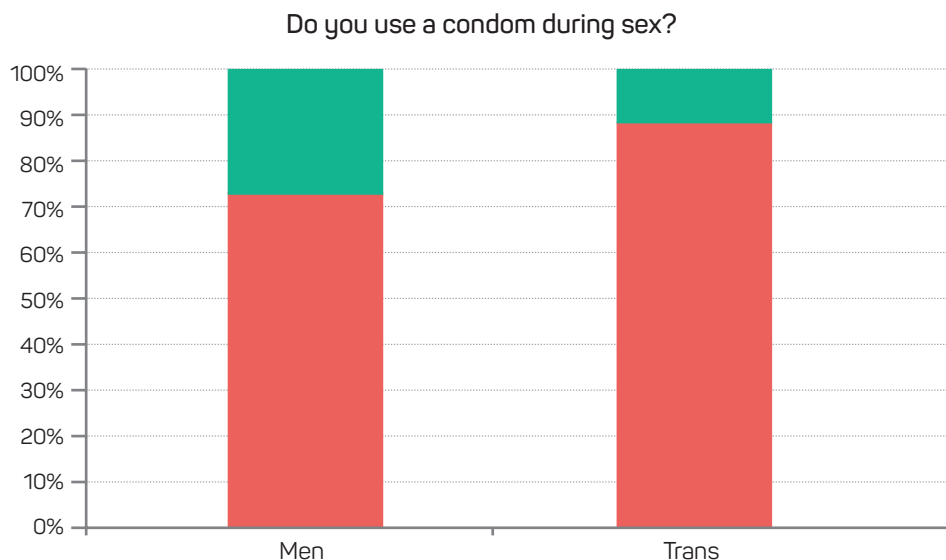
Figure 16.
Distribution of respondents according to **their gender and the use of a condom** (relative share)

- Often + Always
- No + Rarely



Figure 17.
Distribution of respondents according to **their gender and the use of a condom** (relative share)

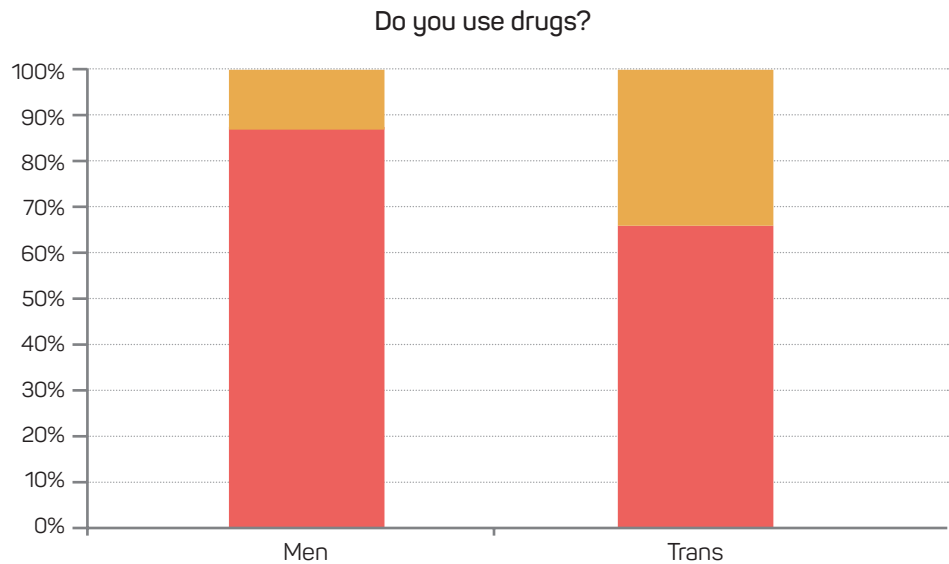
- No + Rarely + Often
- Always



Drug use is significantly different among the two groups of respondents, with a smaller proportion of men (13.2%) reporting that they use such substances, compared to trans respondents – 35.9% (Figure 18).

Figure 18.
Distribution of respondents by gender and drug use (relative share)

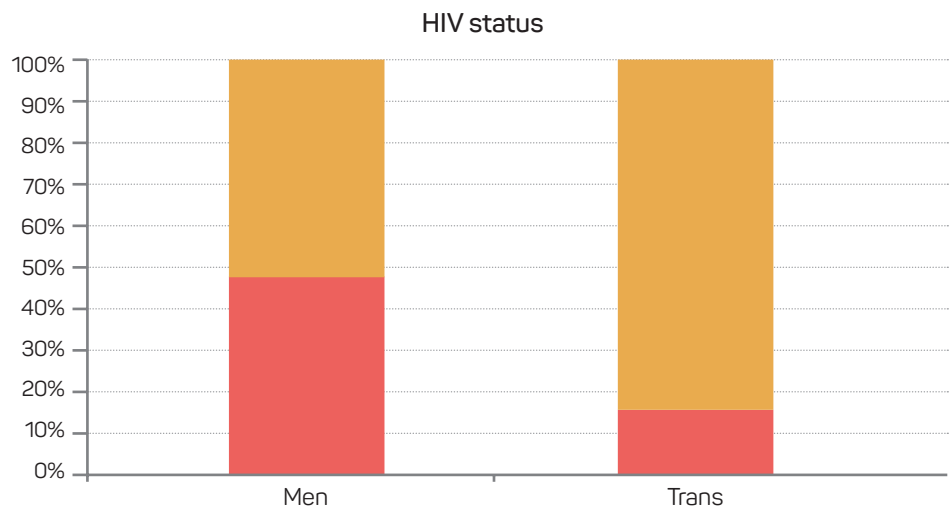
- No
- Yes + Rarely + Often



Knowledge of one's HIV status differs significantly between the two groups, with half of the men (47.9%) reporting a negative status, while it is the case for only 15.4% of the trans respondents (Figure 19). The remaining portion of each group has an unknown status (the test result was not received or the respondent has never tested for HIV: this is the case for half of the men (52.1%) and for 84.6% of trans respondents.

Figure 19.
Distribution of respondents according to their gender and their HIV status (relative share).

- Negative
- Do not know



Both groups also differ on the basis of a prior HIV test; among men, the portion of those who have never tested is 30.4% and among the other group the percentage is twice as large (71.8%) (Figure 20). The responses to the same question are divided into three categories – never tested, tested over the last 12 months and tested more than 12 months ago. Men who tested in the last 12 months were 42.6%, while in the other group, only 17.9%. Every fourth man (27%) reported HIV testing more than 12 months ago, while among trans people this is the case for every tenth (10.3%) (Figure 21).

Figure 20.
Distribution of respondents by gender and previous HIV test (relative share)

- Have never tested
- Have tested at some point

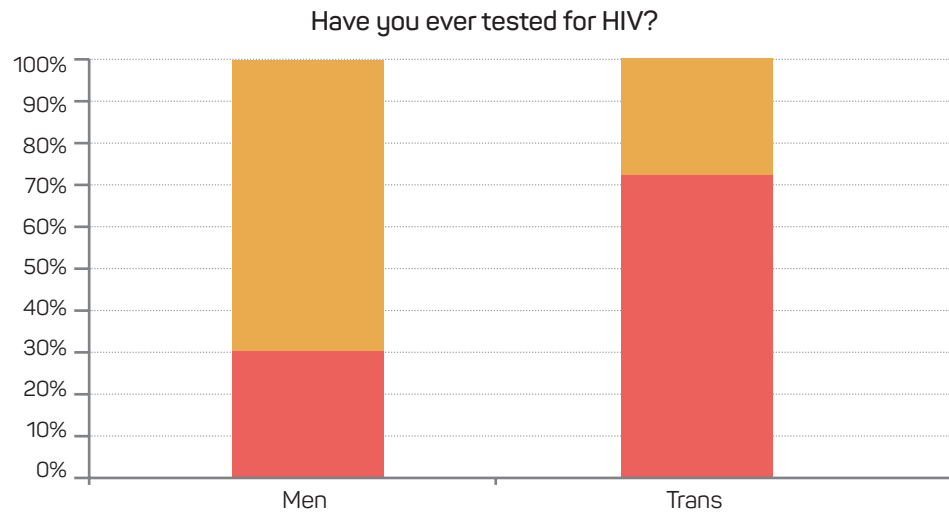
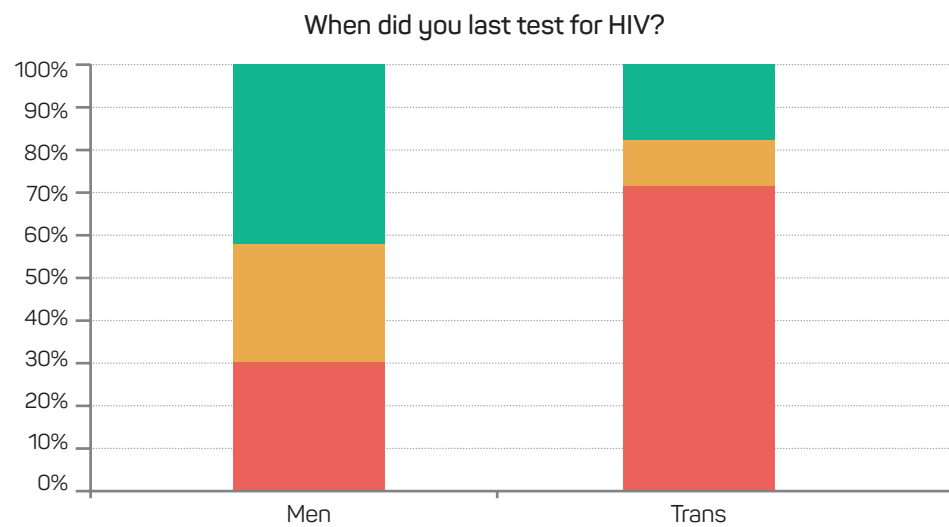


Figure 21.
Distribution of respondents by gender and previous HIV test (relative share)

- Have never tested
- More than 12 months
- Last 12 months



The results are similar in the responses concerning the last tests for STIs and Hepatitis (Figures 22-23). Men more frequently reported that they had tested for STIs (67.0%) or Hepatitis (62.9%) at some point, compared to trans participants (38.5% for STIs and 33.3% for Hepatitis).

Figure 22.
Distribution of respondents by gender and STI test (relative share)

- Have never tested
- Have tested at some point

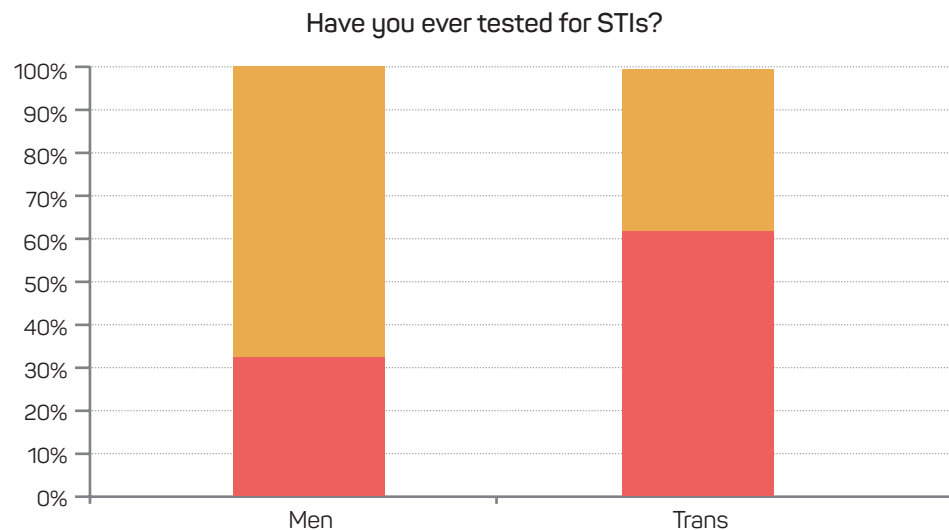
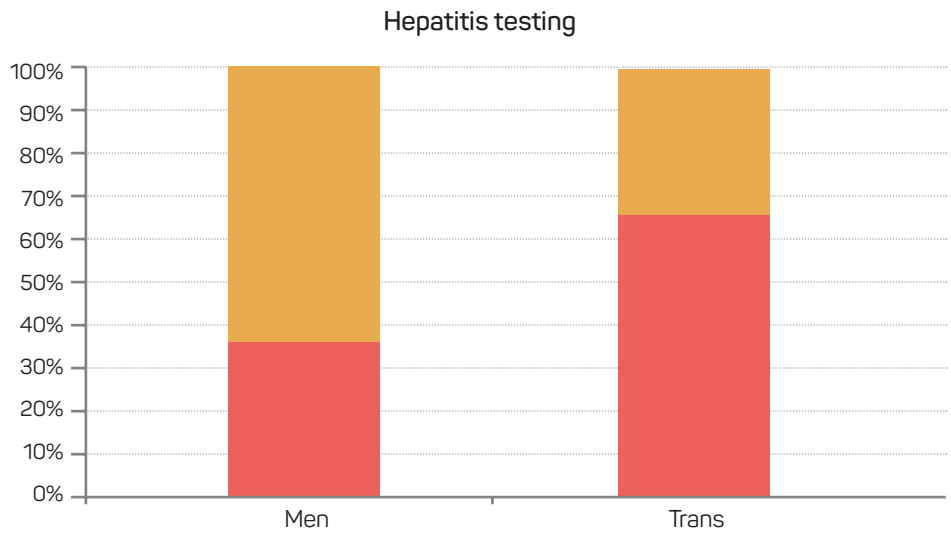


Figure 23.
Distribution of respondents by gender and Hepatitis test (relative share)

- Have never tested
- Have tested at some point

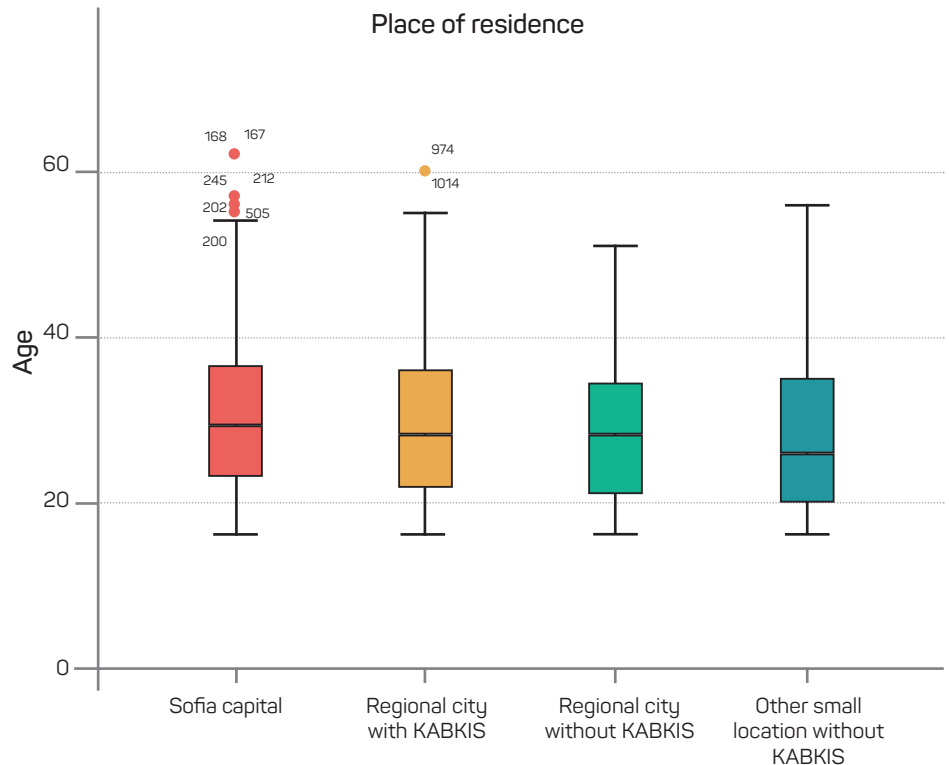


■ By place of residence

The locations in which respondents live are divided into four groups: Sofia (capital), district cities with KABKIS, district cities without KABKIS, and small towns and villages (including non-disclosed locations). Grouping non-disclosed locations together with “small towns and villages” implies a distortion in the results, however, it is insignificant due to the small number (10 or 0.6%) of undisclosed locations.

Respondents from the four types of locations are significantly different in age. The youngest respondents are from small locations without KABKIS (median age of 26) and older in the rest (Figure 24) (median age of 28-29).

Figure 24.
Age “Box plot” graph among the four groups of people by location



Due to the chi-squared analysis requirement to not have expected frequencies over 5% in the table cells, not all correlations can be considered.

The distribution of the answers to the question “Do you use a condom when you have sex?” is significantly different in the various types of locations. It is interesting to note that this correlation is significant not only in the original answers to the question, but also when combining them into “no + rarely” vs “often + always” as well as “always” compared to the other answers. In the capital, the use of a condom is more often reported; the situation is similar in the district cities with KABKIS, whereas it is less often reported in the other two types of locations (Figures 25-27).

The share of “no” responses is relatively similar across all locations (7.1% in Sofia, 7.2% in the regional cities with KABKIS, 12.1% in those without KABKIS and 8.6% in other locations). In contrast, a clear increase of the “rarely” answer is observed (14.7% in Sofia, 22.2% in the regional centers with KABKIS and about 30% in the other two categories of locations). In comparison, the share of “always” responses decreases from the capital compared to the other locations (32.5% in Sofia, 27.2% in the regional cities with KABKIS, 17.2% in the ones without KABKIS and 18.4% in smaller ones). The share of “often” has a relatively similar trend (45.6% in Sofia, 43.4% in regional cities with KABKIS, 37.4% in cities without KABKIS and 41.8% in others). These shares determine the differences in grouping the answers to the question.

When grouping the responses into “no + rarely” vs “often + always”, it is evident that the share of the “often + always” decreases with the decrease of the size of the location. In Sofia, these are four out of five people (78.2%), in the district cities with KABKIS the number is slightly lower (70.6%), while in the other two categories of locations they fall to about half (54.5% for those without KABKIS and 60.2% for the smallest locations).

Comparing the “always” answers vs all other answers, also reveals a number of differences: in the capital, one third (32.5%) declared the use of a condom during every sexual contact, in the district cities with KABKIS the share is slightly lower (27.2%); in the regional cities without KABKIS and the smallest locations the shares are similar (17.2% and 18.4% respectively).

Figure 25.
Distribution of respondents by location and use of condom (relative share)

- No
- Rarely
- Often
- Always

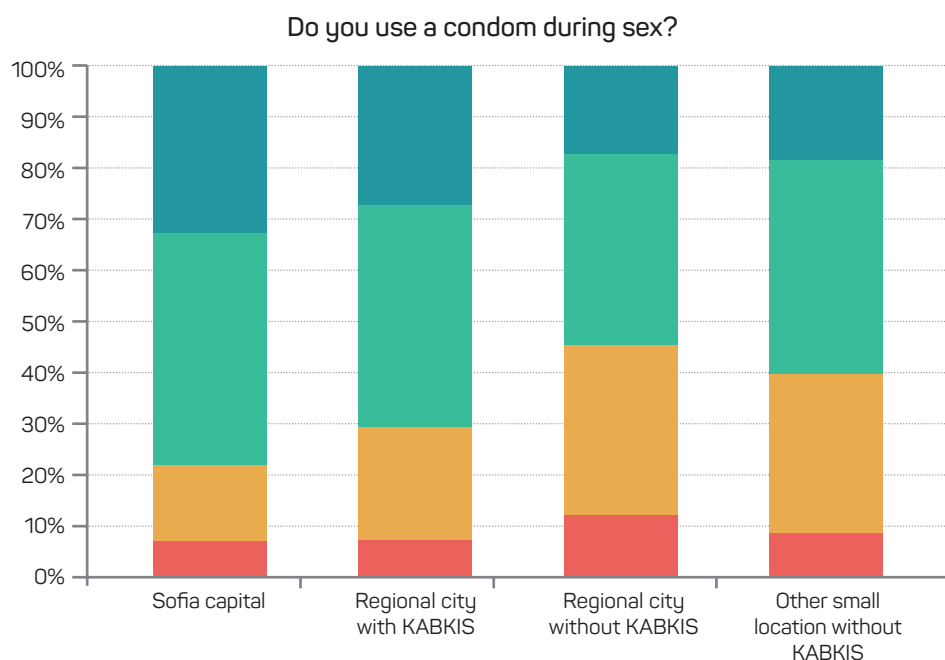


Figure 26.
Distribution of respondents by location and use of condom (relative share)

- No + Rarely
- Often+ Always

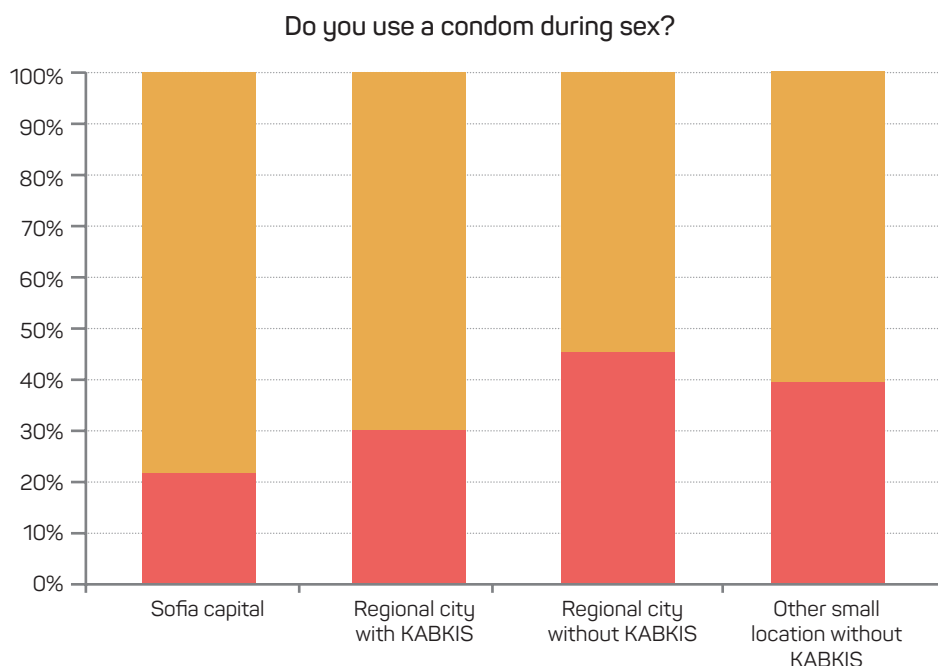
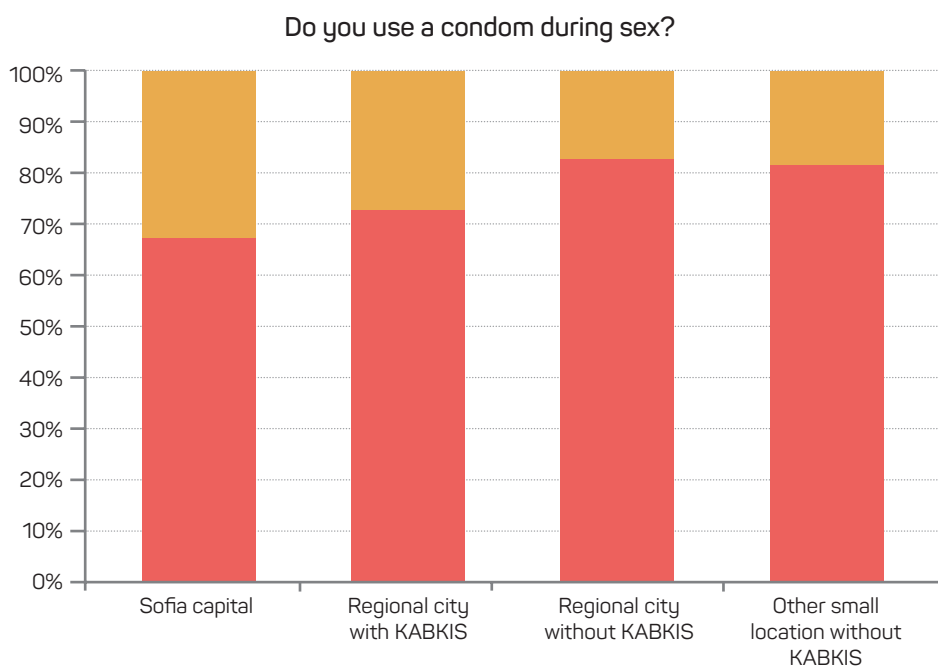


Figure 27.
Distribution of respondents by location and use of condom (relative share).

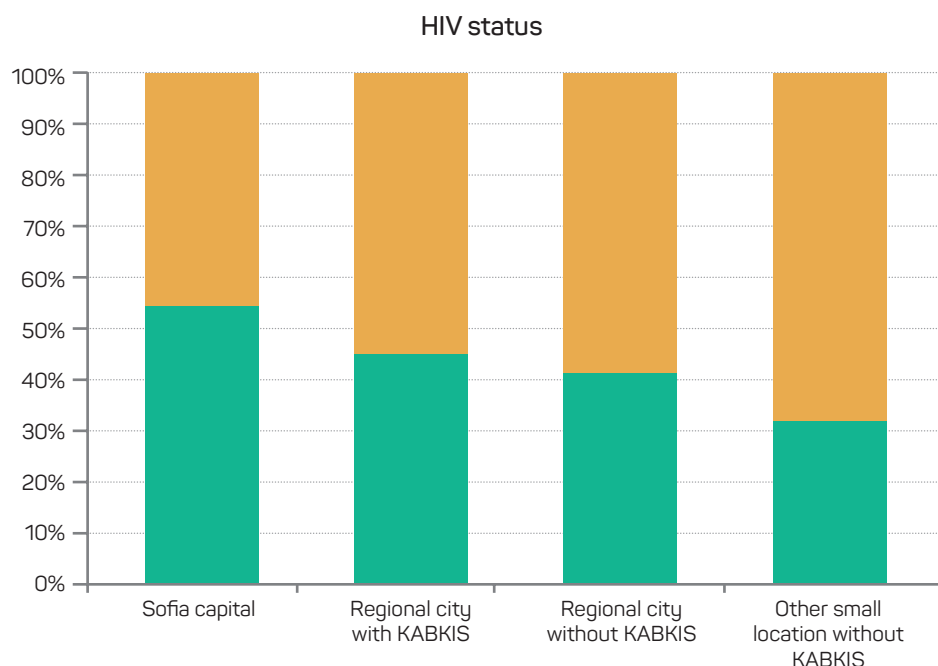
- No + Rarely + Often
- Always



The HIV status declared by the participants prior to taking the OraQuick® home test is also significantly different in the different categories of locations. The largest share of those knowing their (negative) status is in the capital and they account for over half of the participants (54.5%), followed by the regional cities with KABKIS (45.2%), the regional cities without KABKIS (41.4%), and the lowest share is in the small locations (32.0%), (Figure 28). These results indicate that the fewer testing services available in a place, the fewer people get tested, and that there is a clear need for broad and targeted screening programs for HIV, Hepatitis and STIs.

Figure 28.
Distribution of respondents by location and their HIV status (relative share)

- Negative
- Do not know



The time of the last HIV test prior to the current OraQuick® home test provided by Single Step Foundation is significantly different across the different categories of locations, and this relationship is valid for both the original question and its recoded variants with fewer responses. As expected, in small locations, previous testing has occurred further back in the past or never, as compared to the capital and other large cities (Figures 29-31).

The share of respondents who have never tested for HIV in the capital is 23.6% – it is still large, however, in comparison with the other locations, it is significantly lower. In the district cities with KABKIS, one in three respondents (32.6%) has never tested for HIV in their life, while in the other two categories of locations, this share increases to approximately half of the respondents (47.5% for the district cities without KABKIS and 44.5% for the smallest locations).

Half of the participants in Sofia (51.3%) have tested for HIV in the prior 12 months, and only a quarter (25.0%) – more than 12 months prior. In the district cities with KABKIS, the share of those recently tested was lower (37.4%) vs the percentage increase of those tested more than a year prior (30.0%). In the regional cities without KABKIS and the smallest locations the situation is similar – 29.3% and 29.7%, respectively, were tested in the prior year and 23.2% and 25.8%, respectively, for the smallest locations – more than 12 months prior.

Figure 29.
Distribution of the respondents by **location and time of their last HIV test** (relative share)

- Never
- More than a year ago
- Last year
- Last 6 months
- Last 3 months
- Last month

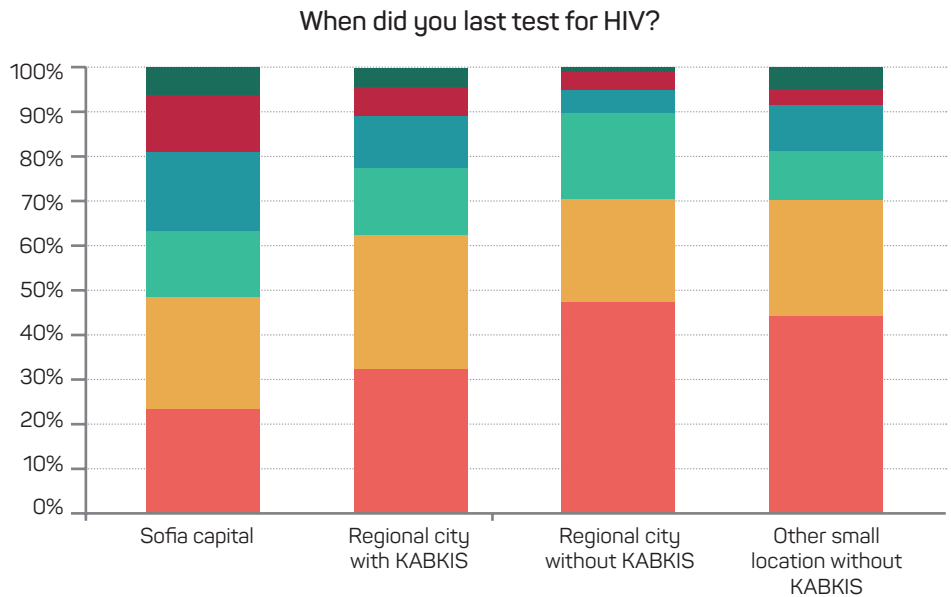


Figure 30.
Distribution of respondents by **location and time of their last HIV test** (relative share)

- Never
- More than 12 months
- Last 12 months

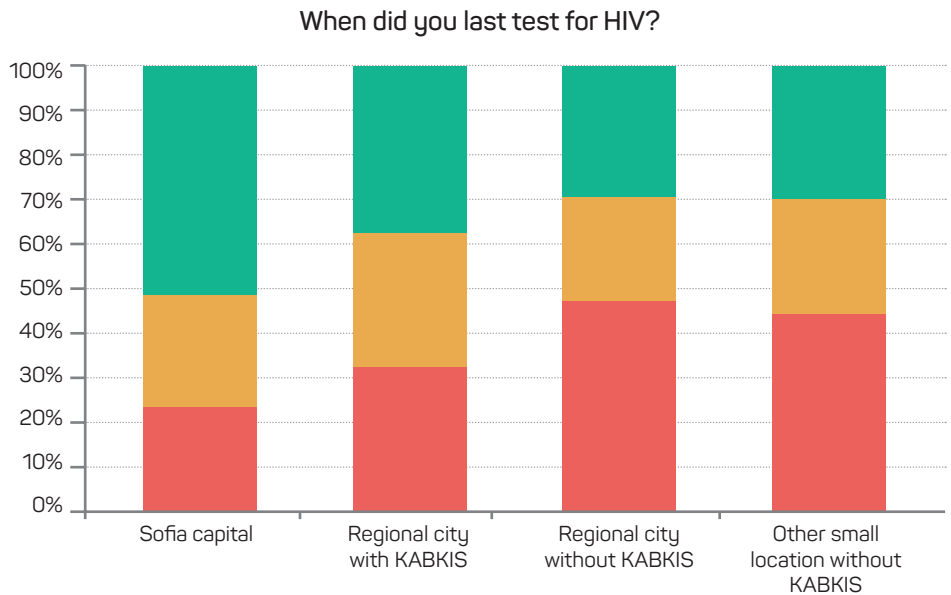
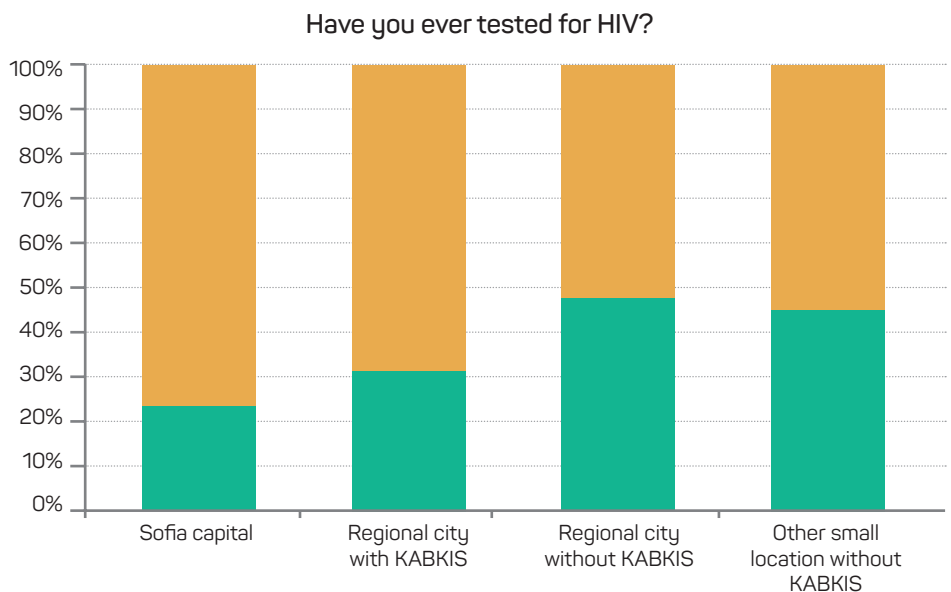


Figure 31.
Distribution of respondents by **location and whether they have ever tested for HIV** (relative share)

- Have never tested
- Have tested at some point



■ By use of condom

This section analyzes whether the use of a condom is related to drugs consumption, the timing of the last HIV test, HIV status and the timing of the last STI and Hepatitis tests. It turns out that the correlation is significant in all variables, and it is valid for both the original variable that reflects the use of a condom and the recoded variable with “no + rarely” vs “frequently + always”. The other option of recoding is represented as well – “always” vs all the other answers.

Data shows that those who use a condom more often, more frequently reported that they do not use drugs, have tested for HIV, STI and Hepatitis more recently, and have a negative HIV status rather than unknown. This correlation is most evident when recoding “no + rarely” vs “often + always”, therefore it is so represented (Figure 32-40).

Among those declaring that they use a condom often or always, the proportion of drug users is 11.8%, compared to 18.4% of those reporting that they do not use or rarely use a condom.

Those who frequently or always use a condom, more often reported that they have tested for HIV at some point in their life (73.5%) vs the group who rarely or never use a condom (56.5% have tested for HIV at some point in their lives).

Participants who reported that they often or always use a condom were more likely to have been tested for HIV in the prior 12 months (47.8%) compared to those who rarely use or do not use a condom (27.5%). On the other hand, the trend is reversed in the proportion of those who have tested more than 12 months prior: 25.6% among those who often/always use a condom, compared to 29% for those who rarely/never use one.

Respondents, who often/always use a condom, more frequently reported that they have tested for other STIs (71.3%) vs 53.7% among those who rarely or never use a condom. The same, but to a lesser extent applies for Hepatitis testing - 65.9% of those who often/always use a condom had a Hepatitis test at some point, compared to 52.8% of those who rarely/never use a condom.

Figure 32.
Distribution of respondents by use of condom and use of drugs (relative share)

- No
- Yes + Rarely + Often

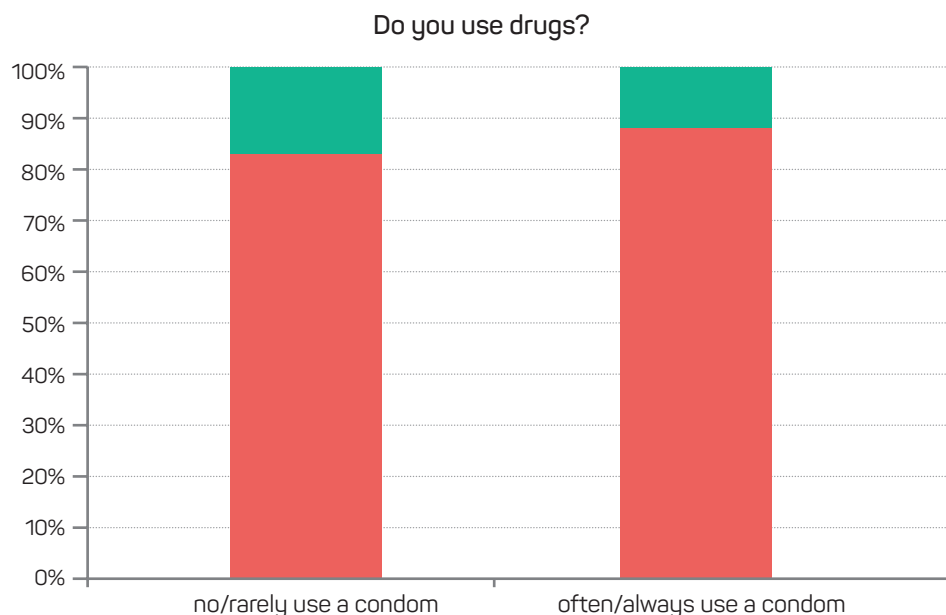


Figure 33.
Distribution of respondents by **use of condom and timing of the last HIV test** (relative share).

- Never
- More than a year ago
- Last year
- Last 6 months
- Last 3 months
- Last month

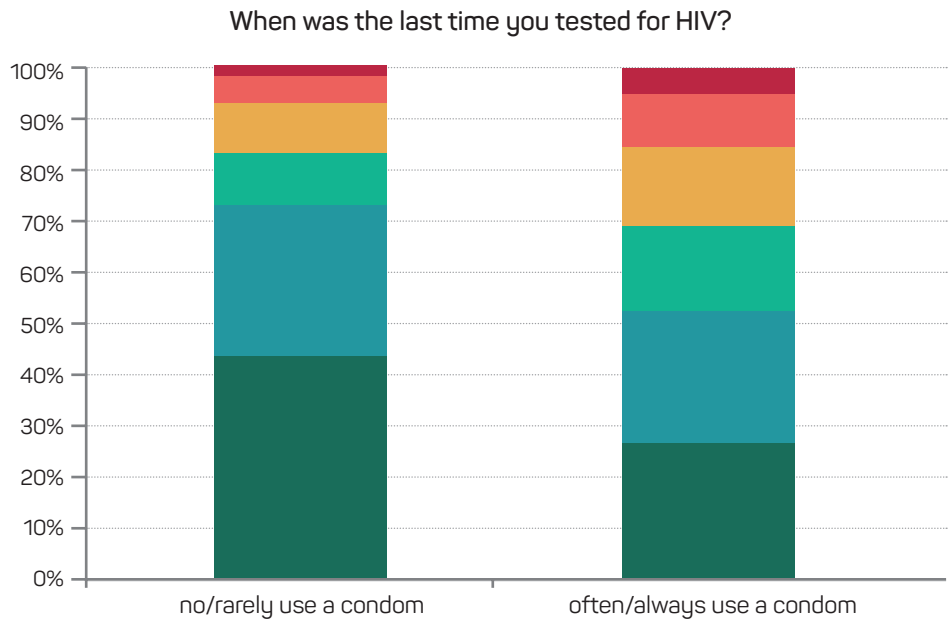


Figure 34.
Distribution of respondents by **use of condoms and timing of the last HIV test** (relative share)

- Never
- More than a year ago
- Last year

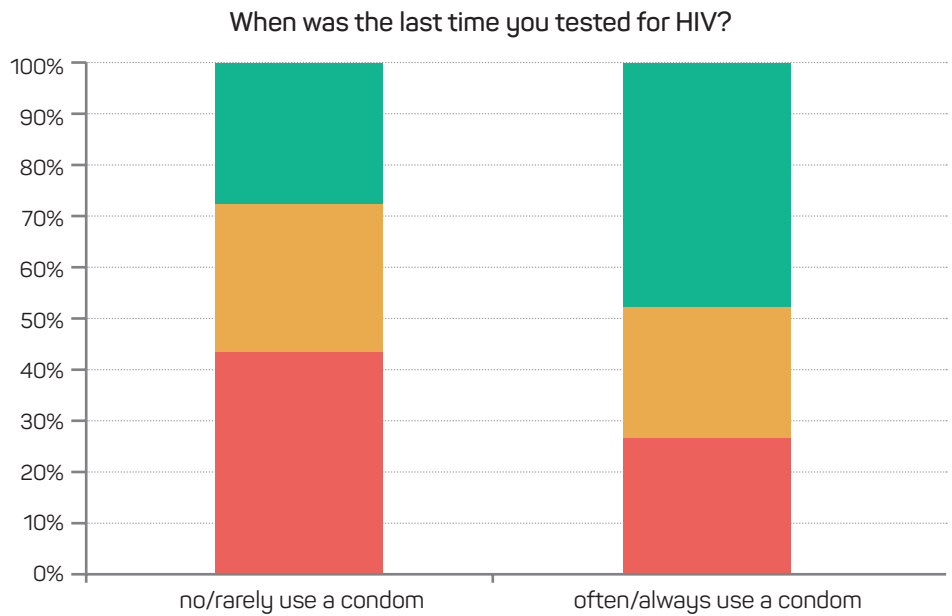


Figure 35.
Distribution of the respondents by **use of condoms and whether they have tested for HIV** (relative share)

- Have never tested
- Have tested at some point

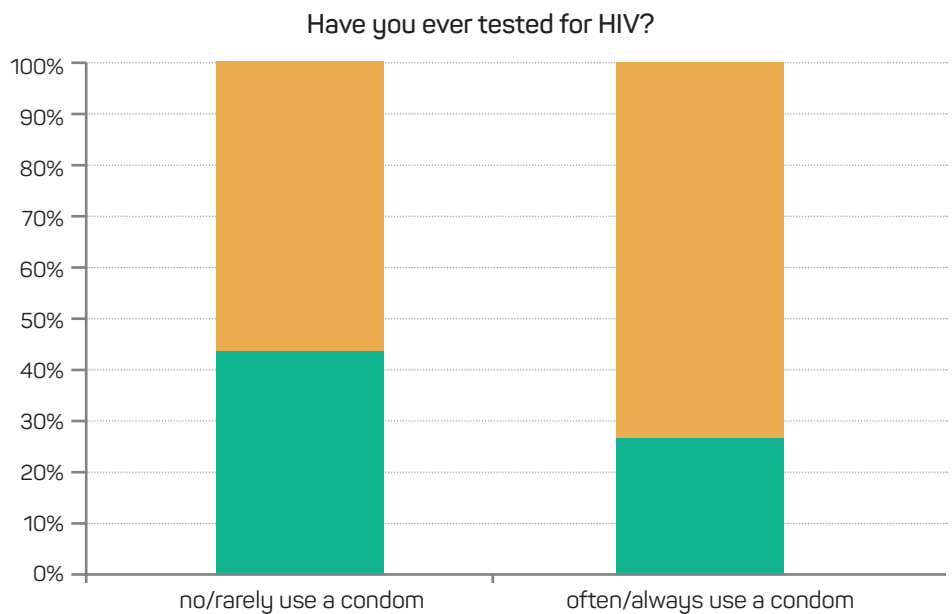


Figure 36.
Distribution of respondents by **use of condom and HIV status** (relative share)

- Negative
- Do not know

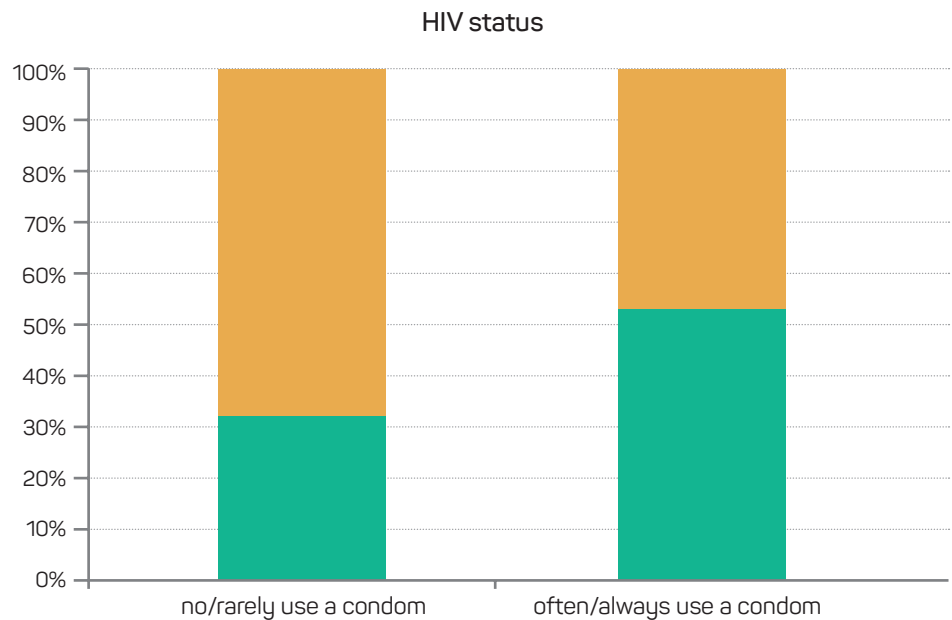


Figure 37.
Distribution of respondents by **use of condom and timing of the last STI test** (relative share)

- Never
- More than a year ago
- Last year
- Last 6 months
- Last 3 months
- Last month

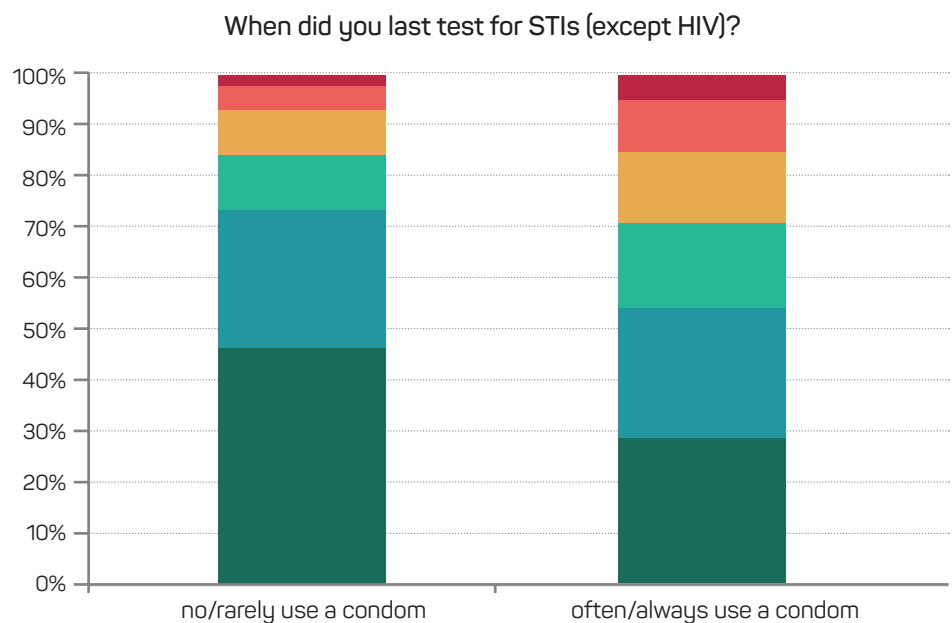


Figure 38.
Distribution of respondents by **use of condoms and whether they have tested for STI** (relative share).

- Have never tested
- Have tested at some point

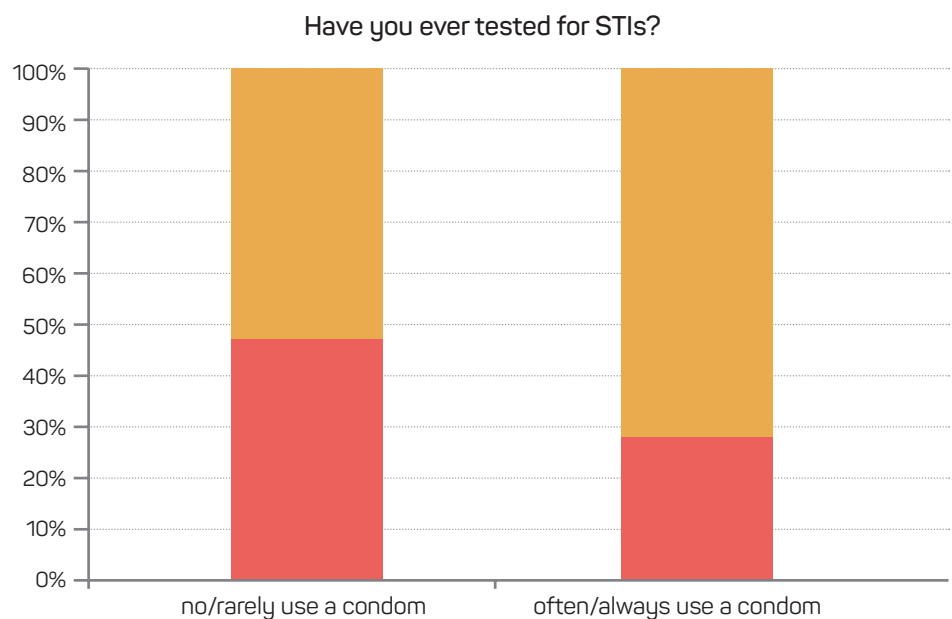


Figure 38 shows an alarming trend of a particularly high number of individuals who rarely or never use a condom, and at the same time have never tested for STIs. This requires a targeted campaign in the MSM community to screen for Chlamydia, Gonorrhea, Hepatitis B and C, Syphilis and other infections. It is also interesting to analyze the second column of the chart, which shows that those who are more likely to use a condom are more likely to test for STIs.

Figure 39.
Distribution of respondents by the **use of condom and timing of the last Hepatitis test** (relative share).

- Never
- More than a year ago
- Last year
- Last 6 months
- Last 3 months
- Last month

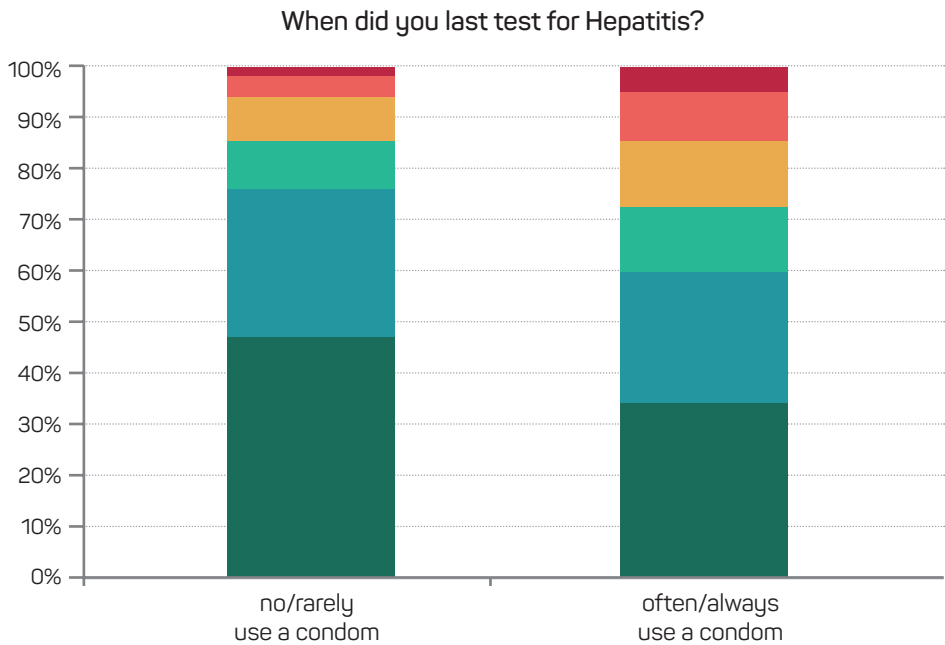
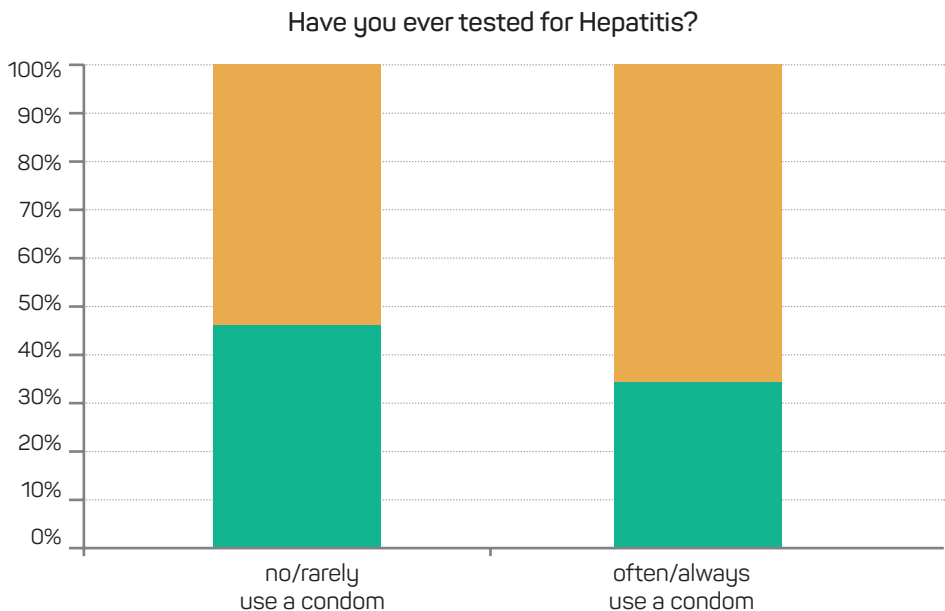


Figure 40.
Distribution of respondents by **use of condom and whether they have tested for Hepatitis** (relative share)

- Have never tested
- Have tested at some point

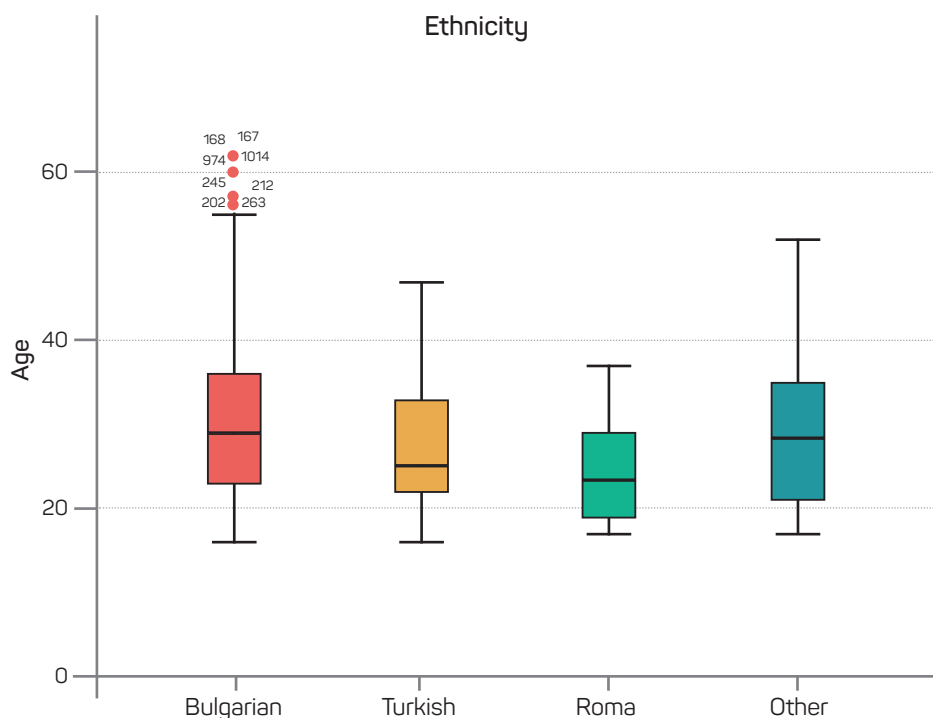


■ By ethnicity

The four groups according to their ethnicity are significantly different according to their age. The youngest are the Roma (median age of 23), followed by the Turks (median age of 25), while the Bulgarians and other ethnic groups are on average older (29 and 28.5, respectively) (Figure 41).

Figure 41.

Age “Box plot” graph among the four groups of people according to their ethnicity



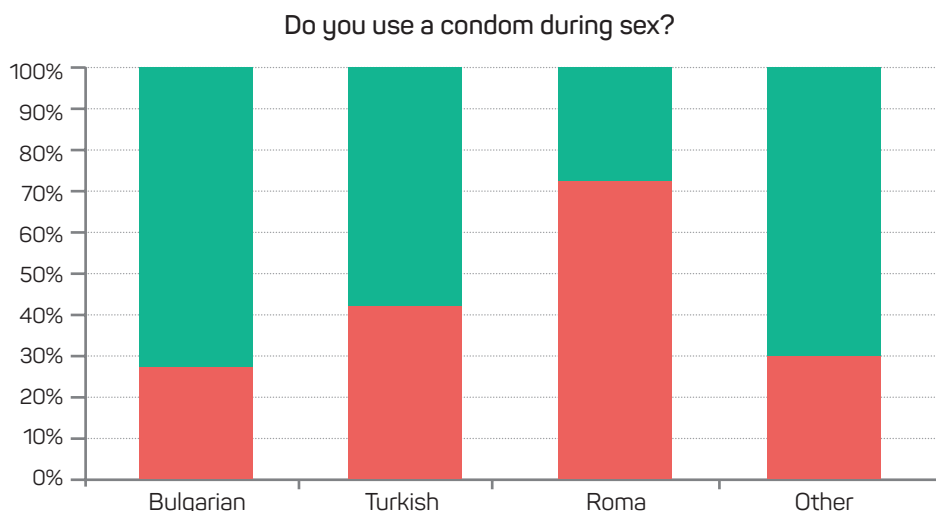
The distribution of individuals according to their ethnicity does not always meet the requirements for the application of the chi-squared analysis, therefore only the two-dimensional distributions are considered where the requirements of the analysis are met.

The use of a condom when recoding the original variable in „no + rarely“ vs „often + always“ is significantly different among the different ethnicities. Most often Bulgarians (72.8%) and other ethnic groups (70.0%) declare that they use a condom frequently or always, unlike the Turks (57.9%) and the Roma (27.6%) (Figure 42).

Figure 42.

Distribution of respondents by ethnicity and use of condom (relative share)

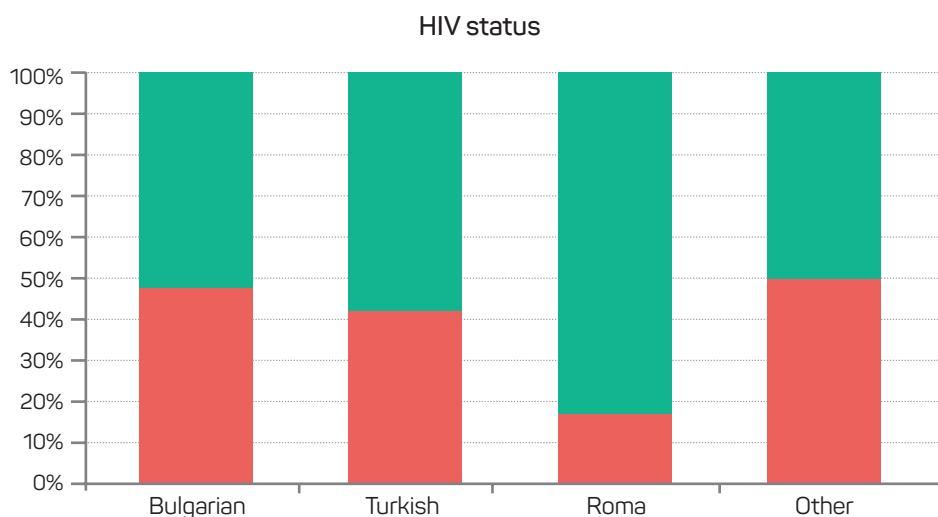
■ No + Rarely
■ Often + Always



Among the Bulgarians, Turks and other ethnic groups, the proportion of those who knew their HIV status (47.8%, 42.1% and 50.0%, respectively) was almost the same, whereas among the Roma, a much smaller percentage were aware of it (only 17.2%).

Figure 43.
Distribution of respondents by ethnicity and HIV status (relative share)

- Negative
- Do not know

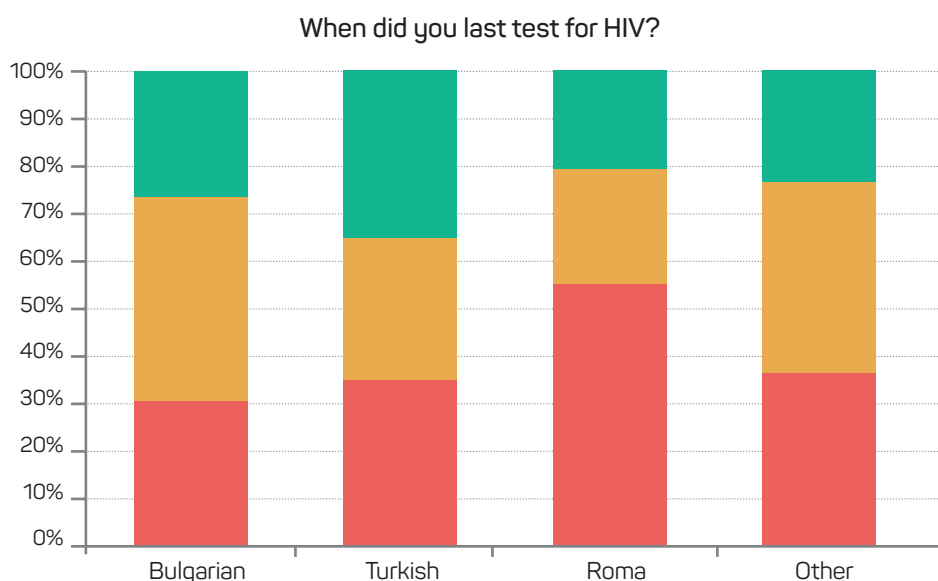


The large number of people among the Roma population who do not know their HIV status, is due to the fact that they have never tested for HIV; they represent over half of the Roma respondents (55.2%), compared to just one-third of all other ethnicities (30.7% for Bulgarians, 35.1% for Turks and 36.7% for other ethnic groups). Bulgarians and other ethnicities are among the largest group of respondents who have tested for HIV over the prior 12 months (42.9% and 40.0%, respectively) compared to 29.8% and 24.1% for Turks and Roma, respectively. On the other hand, the Turks more often reported that they had tested more than 12 months prior - 35.1% compared to 26.5% of the Bulgarians, 23.3% of the other ethnic groups and 20.7% of the Roma (Figures 44 and 46).

It is interesting to check the distribution of the different ethnicities by type of location. It turns out that the Bulgarians surveyed are mainly from the capital city and the district cities with KABKIS (47.1% and 32.0% respectively, a total of 79.1%, combined) vs only 19.3% of Turks in Sofia (the capital and district cities with KABKIS combined - for a total of 47.4%). The distribution of Roma and other ethnicities in the capital and district cities with KABKIS is similar - 65.5% and 63.3%, respectively. On the other hand, Turks are most numerous in small locations (38.6%) vs only 15.2% of Bulgarians, 17.2% of Roma and 26.7% of other ethnic groups (Figure 45).

Figure 44.
Distribution of respondents by ethnicity and timing of the last HIV test (relative share)

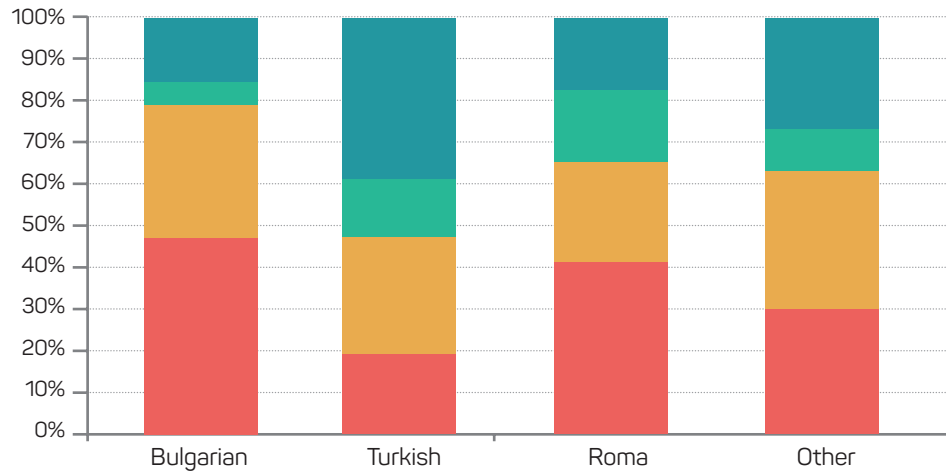
- Never
- Last year
- More than a year ago



Ethnicity and place of residence

Figure 45.
Distribution of the respondents by ethnicity and location (relative share)

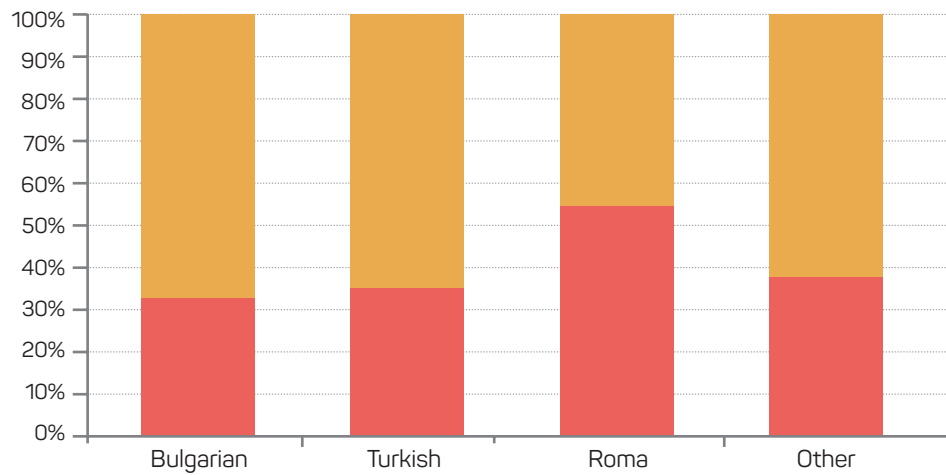
- Sofia capital
- Regional city with KABKIS
- Regional city without KABKIS
- Other smaller locations without KABKIS



Have you ever tested for HIV?

Figure 46.
Distribution of the respondents by ethnicity and whether they have ever tested for HIV (relative share)

- Have never tested
- Have tested at some point



The situation of the STI and Hepatitis testing is similar to that for HIV – Roma most rarely had such tests (31.0% and 34.5% have tested for STIs and Hepatitis, respectively), second are the Turks (54.4% and 52.6% for STI and Hepatitis, respectively). Bulgarians and other ethnicities have similar results in testing frequency for STIs and Hepatitis, roughly two out of every three reported that they have ever been tested (Figure 47-48).

Have you ever tested for STIs?

Figure 47.
Distribution of respondents by ethnicity and whether they have ever tested for STI (relative share)

- Have never tested
- Have tested at some point

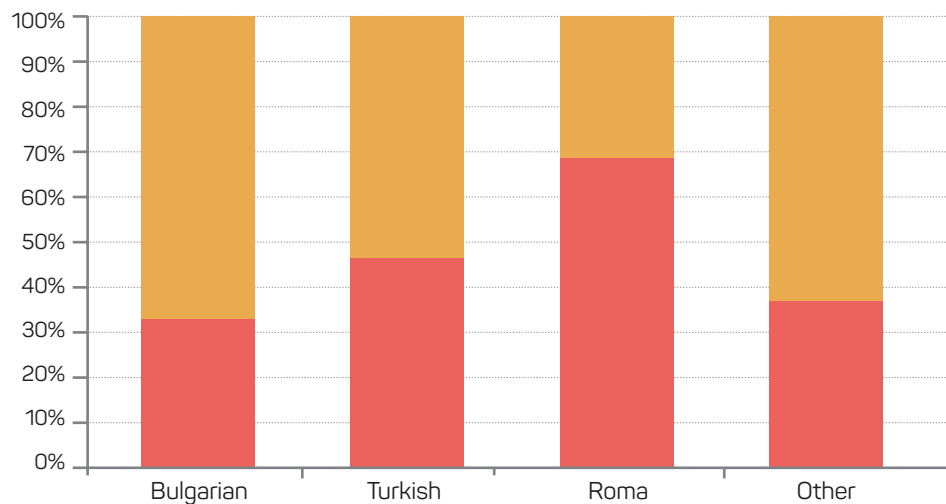
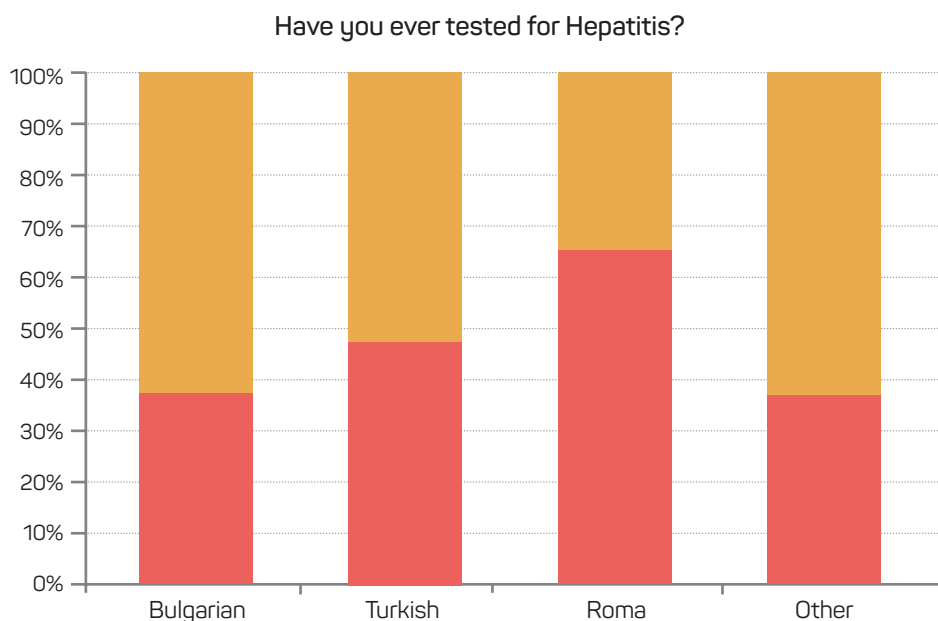


Figure 48.
Distribution of respondents by ethnicity and whether they have ever tested for Hepatitis (relative share)

- Have never tested
- Have tested at some point



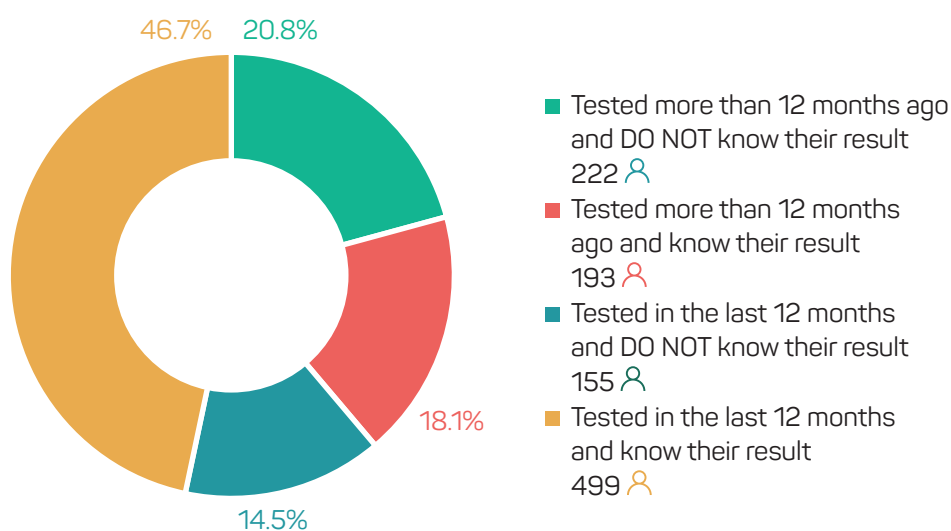
■ **Progress indicator³² – % MSM, tested for HIV in the last 12 months, who know their result**

The calculated percentage is not indicative because it does not include those men who have a positive HIV result – they would not seek the home HIV test. Since it is calculated for MSM, trans respondents are excluded.

The indicator requires us to look at only those men who have ever had an HIV test. It determines the proportion of those tested in the last 12 months that received their result.

The number of men who have ever tested for HIV in their life is 1,069. Of those 654 have tested in the last 12 months and 499 have received their result. The value of the indicator is 46.7% (Figure 49).

Figure 49.
Distribution of respondents by the timing of their last HIV test and whether they have received their result (relative share; absolute number)



32. Global AIDS Monitoring, UNAIDS, 2018
http://www.unaids.org/sites/default/files/media_asset/2017-Global-AIDS-Monitoring_en.pdf

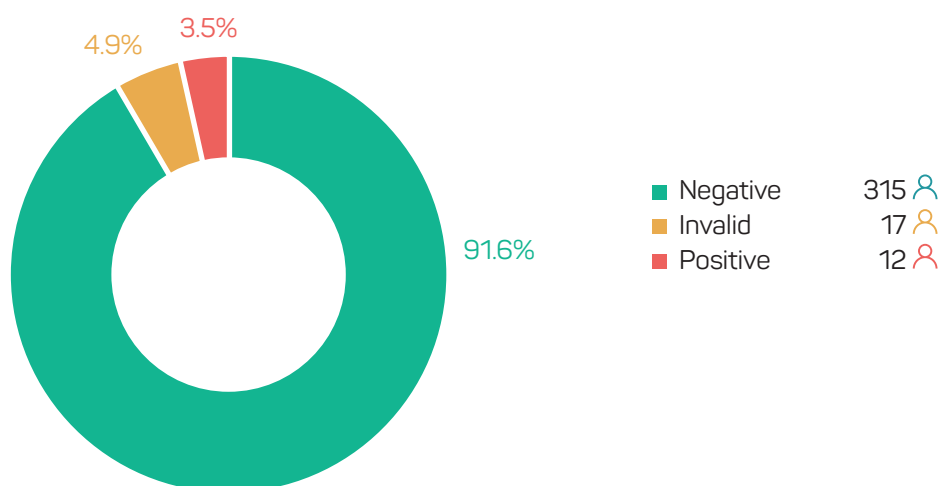
Questionnaire after testing

Overall characteristics

All 332 respondents in the second online questionnaire reported to have performed the test. For almost all of them (94.9%), the result is negative, while for the remaining 5.1% it is invalid. Also, 12 additional people reported a positive result via our dedicated telephone hotline. Two of them had a false positive test; they were tested at a KABKIS and their result was negative. Figure 50 depicts all 344 persons who gave us feedback with their relative shares recalculated – 91.6%, 4.9% and 3.5% with a negative, invalid and a positive result, respectively. It is important to note that it is highly likely that an additional number of clients with a positive result did not contact us at all.

Figure 50.

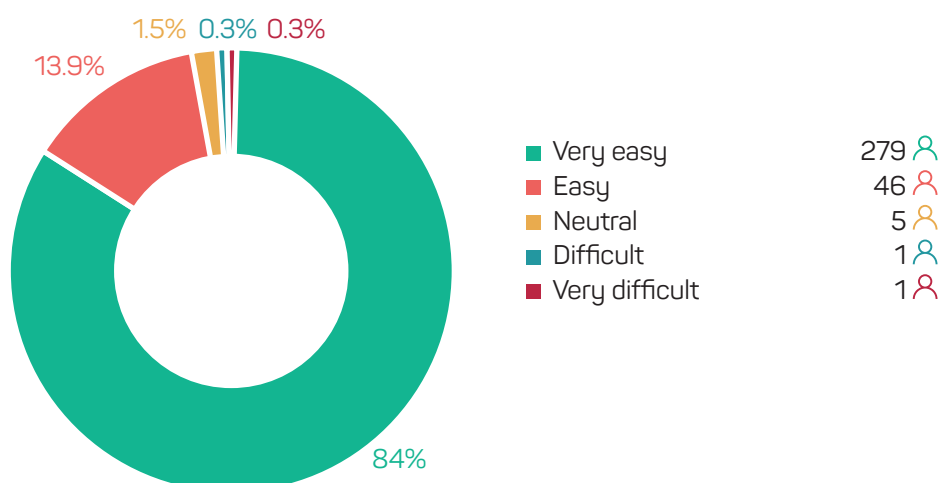
Distribution of respondents by their answer of the question **“What was the result of the test?”** (relative share; absolute number)



Four out of five respondents (84.0%), believe that the process from ordering the testing kit to the actual performance of the HIV test at home is “very easy”. 13.9% and 1.5% classified it as “easy” and “neutral”, respectively. For one person the process was difficult, and for one more – very difficult.

Figure 51.

Distribution of respondents according to the answers to the question **“How do you evaluate the process – from ordering to testing?”** (relative share; absolute number)



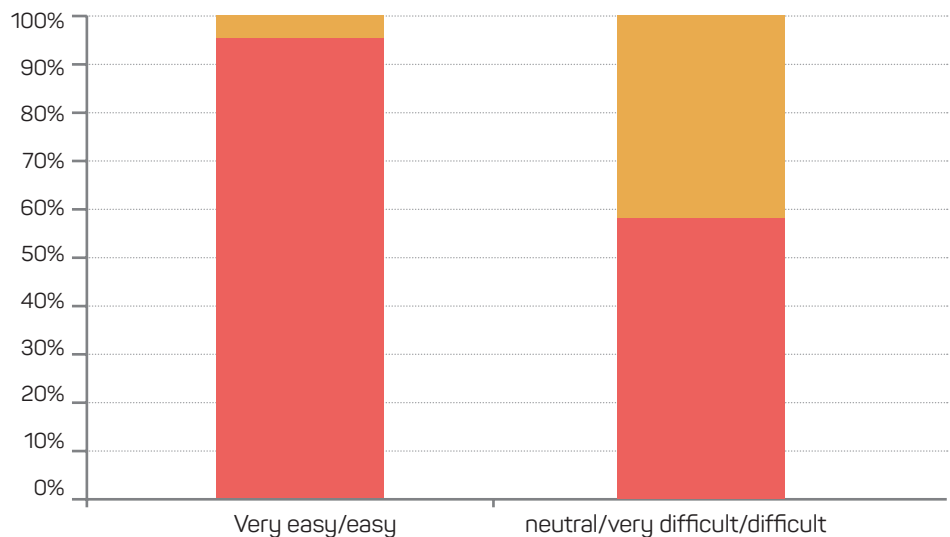
“In Depth” Analysis

The relationship between the test result and the respondents’ assessment of the process – from order to testing, was investigated. Due to the large number of cells in the table, responses to the question about process evaluation are recoded into two categories – the two positive ones are merged into one, and both negative ones are combined with the neutral response.

The results show that among those evaluating the process as “easy” or “very easy”, the participants with a negative (but valid) result predominate and those with an invalid one are only 4.3%. On the other hand, those, who evaluate the process as “difficult”, “very difficult” or “neutral” have 40% invalid tests ($p < 0.001$). This result allows us to make the assumption that some of the invalid tests might not have been performed properly.

Figure 52.
Distribution of the respondents according to the answer of the question “How do you evaluate the process from ordering to testing?” and “What was the result of the test?” (relative share)

- Negative
- Invalid



Positive results in the HIV testing

Out of 900 tests sent out to specified users' addresses in 120 locations, 12 people reported they had a positive result. All of them are Bulgarian citizens under 30 and predominantly under 25 years of age. Two of them proved to be false positive after they had a blood test at a KABKIS. The remaining 10 were confirmed as positive. No trans study participants reported a test with a positive result. It is important to note that it is highly likely that an additional number of clients with a positive result did not contact us at all due to the prevailing fear and stigma in the country. The contact with everyone who wanted to share their results was through a hotline where users could at any time get support by a Single Step specialist. For them, the first hours and days after receiving the result were the most difficult, but thanks to the efforts of our team and through constant contact, they managed to overcome the initial panic and fright of the news. Clients who wished to do so, continued the contact with the HIV expert at Single Step Foundation and were instructed how to access treatment and care in one of the five specialized HIV/AIDS treatment sectors in the country. Those of the users who quickly managed to start therapy now have undetectable viral load and the monitoring of their health and emotional state is successful. Difficulties are faced by those who live far away from any of the five treatment sectors because this is related to travel and absence from home, work and school. Some clients do not have experience with the healthcare system and the process of getting treatment for them is highly frustrating and incomprehensible, which requires additional support efforts. Part of the feedback is that it would be beneficial for newly diagnosed patients to receive more support at the hospital, either by a psychologist or by a patient's representative, to help them deal with the procedures and give them emotional support.



Appendix.

One and two dimensional distributions

		n	%
Age	16-19	213	13.5%
	20-29	639	40.6%
	30-39	493	31.3%
	40-49	198	12.6%
	50+	31	2.0%
Gender	Men	1,535	97.5%
	Trans	39	2.5%
Did you have sex with men in the last 12 months?	Yes	1,574	100.0%
Location	Undefined	10	0.6%
	Blagoevgrad	24	1.5%
	Burgas	85	5.4%
	Varna	150	9.5%
	Veliko Tarnovo	42	2.7%
	Vidin	7	0.4%
	Vratsa	10	0.6%
	Gabrovo	18	1.1%
	Dobrich	16	1.0%
	Kardzhali	8	0.5%
	Kyustendil	8	0.5%
	Lovech	8	0.5%
	Montana	10	0.6%
	Pazardzhik	26	1.7%
	Pernik	22	1.4%
	Pleven	31	2.0%
	Plovdiv	171	10.9%
	Razgrad	6	0.4%
	Ruse	29	1.8%
	Silistra	4	0.3%
	Sliven	17	1.1%
	Smolyan	13	0.8%
	Sofia region	22	1.4%
	Sofia capital	718	45.6%
	Stara Zagora	57	3.6%
	Targovishte	5	0.3%
	Haskovo	17	1.1%
	Shumen	22	1.4%
	Yambol	18	1.1%
	Do you use a condom when you have sex?	No	121
Rarely		330	21.0%
Often		689	43.8%
Always		434	27.6%

Do you use drugs?	No	1,358	86.3%
	Yes, rarely	180	11.4%
	Yes, often	36	2.3%
HIV status	Negative	741	47.1%
	Do not know	833	52.9%
When did you last test for HIV?	Last month	78	5.0%
	Last 3 months	137	8.7%
	Last 6 months	217	13.8%
	Last year	229	14.5%
	More than a year ago	419	26.6%
	Never	494	31.4%
How do you prefer to test for HIV?	Free home test	967	61.4%
	Paid home test (if there is no free)	158	10.0%
	Health center	386	24.5%
	Mobile laboratory	63	4.0%
When did you last test for STI (except HIV)?	Last month	64	4.1%
	Last 3 months	136	8.6%
	Last 6 months	196	12.5%
	Last year	237	15.1%
	More than a year ago	410	26.0%
	Never	531	33.7%
When did you last test for Hepatitis?	Last month	58	3.7%
	Last 3 months	128	8.1%
	Last 6 months	184	11.7%
	Last year	188	11.9%
	More than a year ago	420	26.7%
	Never	596	37.9%
Ethnicity	Bulgarian	1,458	92.6%
	Turkish	57	3.6%
	Roma	29	1.8%
	Other	30	1.9%
How did you learn about this campaign?	Facebook	284	18.0%
	Grindr	910	57.8%
	Instagram	218	13.9%
	Single Step website	69	4.4%
	Other	10	0.6%
	TV	26	1.7%
	Internet	6	0.4%
	Friend/Acquaintance/ Partner	51	3.2%
How did you learn about this campaign?	Facebook	284	18.00%
	Grindr	910	57.80%
	Instagram	218	13.90%
	Single Step website	69	4.40%
	Other	42	2.70%
	Friend/Acquaintance/ Partner	51	3.20%

	Average	Min	Max
Age	29	16	62

Age	p<0,001		
Men	N	Valid	1,535
		Missing	0
	Median		29.00
	Minimum		16
	Maximum		62
Trans people	N	Valid	39
		Missing	0
	Median		20.00
	Minimum		16
			41

		Gender				p
		Men		Trans		
		n	%	n	%	
Do you use a condom when you have sex?	No/Rarely	429	27.9%	22	56.4%	<0.001
	Yes/Always	1,106	72.1%	17	43.6%	
Do you use a condom when you have sex?	No/Rarely/Often	1,106	72.1%	34	87.2%	0.044
	Always	429	27.9%	5	12.8%	
Do you use drugs?	No	1,333	86.8%	25	64.1%	<0.001
	Yes, rarely or often	202	13.2%	14	35.9%	
HIV status	Negative	735	47.9%	6	15.4%	<0.001
	Do not know	800	52.1%	33	84.6%	
HIV test	Have never tested	466	30.4%	28	71.8%	<0.001
	Have tested at some point	1,069	69.6%	11	28.2%	
When did you last test for HIV?	Never	466	30.4%	28	71.8%	<0.001
	Last 12 months	654	42.6%	7	17.9%	
	More than 12 months ago	415	27.0%	4	10.3%	
Test for STI	Have never tested	507	33.0%	24	61.5%	<0.001
	Have tested at some point	1,028	67.0%	15	38.5%	
Test for Hepatitis	Have never tested	570	37.1%	26	66.7%	<0.001
	Have tested at some point	965	62.9%	13	33.3%	

		Location								p
		Sofia capital		Regional city with KABKIS		Regional city without KABKIS		Other smaller locations without KABKIS		
		n	%	n	%	n	%	n	%	
Age	16-19	62	8.6%	73	14.6%	20	20.2%	58	22.7%	<0.001
	20-29	301	41.9%	206	41.2%	35	35.4%	97	37.9%	
	30-39	238	33.1%	163	32.6%	37	37.4%	55	21.5%	
	40-49	104	14.5%	48	9.6%	6	6.1%	40	15.6%	
	50+	14	1.9%	10	2.0%	1	1.0%	6	2.3%	
Gender	Men	705	98.1%	485	97.0%	96	97.0%	249	97.3%	0.660*
	Trans	14	1.9%	15	3.0%	3	3.0%	7	2.7%	
Do you use a condom when you have sex?	No	51	7.1%	36	7.2%	12	12.1%	22	8.6%	<0.001
	Rarely	106	14.7%	111	22.2%	33	33.3%	80	31.3%	
	Often	328	45.6%	217	43.4%	37	37.4%	107	41.8%	
	Always	234	32.5%	136	27.2%	17	17.2%	47	18.4%	
Do you use a condom when you have sex?	No/Rarely	157	21.8%	147	29.4%	45	45.5%	102	39.8%	<0.001
	Often/Always	562	78.2%	353	70.6%	54	54.5%	154	60.2%	
Do you use a condom when you have sex?	No/Rarely/Often	485	67.5%	364	72.8%	82	82.8%	209	81.6%	<0.001
	Always	234	32.5%	136	27.2%	17	17.2%	47	18.4%	
Do you use drugs?	No	611	85.0%	439	87.8%	85	85.9%	223	87.1%	0.607*
	Yes, rarely	92	12.8%	47	9.4%	12	12.1%	29	11.3%	
	Yes, often	16	2.2%	14	2.8%	2	2.0%	4	1.6%	
Do you use drugs?	No	611	85.0%	439	87.8%	85	85.9%	223	87.1%	0.538
	Yes, rarely or often	108	15.0%	61	12.2%	14	14.1%	33	12.9%	
HIV status	Negative	392	54.5%	226	45.2%	41	41.4%	82	32.0%	<0.001
	Do not know	327	45.5%	274	54.8%	58	58.6%	174	68.0%	
When did you last test for HIV?	Last month	44	6.1%	21	4.2%	1	1.0%	12	4.7%	<0.001
	Last 3 months	91	12.7%	33	6.6%	4	4.0%	9	3.5%	
	Last 6 months	127	17.7%	58	11.6%	5	5.1%	27	10.5%	
	More than a year ago	107	14.9%	75	15.0%	19	19.2%	28	10.9%	
	More than a year ago	180	25.0%	150	30.0%	23	23.2%	66	25.8%	
	Never	170	23.6%	163	32.6%	47	47.5%	114	44.5%	
When did you last test for HIV?	Never	170	23.6%	163	32.6%	47	47.5%	114	44.5%	<0.001
	Last 12 months	369	51.3%	187	37.4%	29	29.3%	76	29.7%	
	More than 12 months ago	180	25.0%	150	30.0%	23	23.2%	66	25.8%	
Test for HIV	Have never tested	170	23.6%	163	32.6%	47	47.5%	114	44.5%	<0.001
	Have tested at some point	549	76.4%	337	67.4%	52	52.5%	142	55.5%	
How do you prefer to test yourself for HIV?	Free at home	426	59.2%	306	61.2%	71	71.7%	164	64.1%	0.216*
	Paid at home if there is no free	70	9.7%	54	10.8%	6	6.1%	28	10.9%	
	Health center	197	27.4%	117	23.4%	20	20.2%	52	20.3%	
	Mobile laboratory	26	3.6%	23	4.6%	2	2.0%	12	4.7%	
When did you last test for STI (except HIV)?	Last month	40	5.6%	14	2.8%	2	2.0%	8	3.1%	<0.001
	Last 3 months	89	12.4%	32	6.4%	4	4.0%	11	4.3%	

	Last 6 months	125	17.4%	45	9.0%	9	9.1%	17	6.6%	
	In the last year	112	15.6%	75	15.0%	15	15.2%	35	13.7%	
	More than a year ago	176	24.5%	144	28.8%	23	23.2%	67	26.2%	
	Never	177	24.6%	190	38.0%	46	46.5%	118	46.1%	
STI test	Never has been tested	177	24.6%	190	38.0%	46	46.5%	118	46.1%	<0.001
	Has ever tested	542	75.4%	310	62.0%	53	53.5%	138	53.9%	
When did you last test for Hepatitis?	Last month	42	5.8%	8	1.6%	1	1.0%	7	2.7%	<0.001
	Last 3 months	87	12.1%	30	6.0%	2	2.0%	9	3.5%	
	Last 6 months	108	15.0%	48	9.6%	5	5.1%	23	9.0%	
	Last year	87	12.1%	62	12.4%	7	7.1%	32	12.5%	
	More than a year ago	183	25.5%	141	28.2%	27	27.3%	69	27.0%	
	never	212	29.5%	211	42.2%	57	57.6%	116	45.3%	
Test for Hepatitis	Have never tested	212	29.5%	211	42.2%	57	57.6%	116	45.3%	<0.001
	Have tested at some point	507	70.5%	289	57.8%	42	42.4%	140	54.7%	
Ethnicity	Bulgarian	687	95.5%	467	93.4%	83	83.8%	221	86.3%	<0.001*
	Turkish	11	1.5%	16	3.2%	8	8.1%	22	8.6%	
	Roma	12	1.7%	7	1.4%	5	5.1%	5	2.0%	
	Other	9	1.3%	10	2.0%	3	3.0%	8	3.1%	
How did you learn about this campaign?	Facebook	129	17.9%	78	15.6%	20	20.2%	57	22.3%	0.054*
	Grindr	410	57.0%	302	60.4%	56	56.6%	142	55.5%	
	Instagram	114	15.9%	69	13.8%	7	7.1%	28	10.9%	
	Single Step website	27	3.8%	22	4.4%	9	9.1%	11	4.3%	
	Other	16	2.2%	18	3.6%	2	2.0%	6	2.3%	
	Friend/Acquaintance/ Partner	23	3.2%	11	2.2%	5	5.1%	12	4.7%	

Age	p<0,001		
Sofia capital		Valid	719
		Missing	0
		Median	29.00
		Minimum	16
		Maximum	62
Regional city with KABKIS		Valid	500
		Missing	0
		Median	28.00
		Minimum	16
		Maximum	60
Regional city without KABKIS		Valid	99
		Missing	0
		Median	28.00
		Minimum	16
		Maximum	51
Other small locations without KABKIS		Valid	256
		Missing	0
		Median	26.00
		Minimum	16
		Maximum	56

		Ethnicity								p
		Bulgarian		Turkish		Roma		Other		
		n	%	n	%	n	%	n	%	
Age	16-19	195	13.4%	4	7.0%	8	27.6%	6	20.0%	0.003*
	20-29	577	39.6%	38	66.7%	14	48.3%	10	33.3%	
	30-39	468	32.1%	8	14.0%	7	24.1%	10	33.3%	
	40-49	188	12.9%	7	12.3%	0	0.0%	3	10.0%	
	50+	30	2.1%	0	0.0%	0	0.0%	1	3.3%	
Gender	Men	1,423	97.6%	56	98.2%	27	93.1%	29	96.7%	0.459*
	Trans	35	2.4%	1	1.8%	2	6.9%	1	3.3%	
Location	Sofia capital	687	47.1%	11	19.3%	12	41.4%	9	30.0%	<0.001*
	Regional city with KABKIS	467	32.0%	16	28.1%	7	24.1%	10	33.3%	
	Regional city without KABKIS	83	5.7%	8	14.0%	5	17.2%	3	10.0%	
	Other small locations without KABKIS	221	15.2%	22	38.6%	5	17.2%	8	26.7%	
Regions	Undefined	9	0.6%	1	1.8%	0	0.0%	0	0.0%	<0.001*
	Blagoevgrad	22	1.5%	2	3.5%	0	0.0%	0	0.0%	
	Burgas	79	5.4%	5	8.8%	0	0.0%	1	3.3%	
	Varna	132	9.1%	10	17.5%	1	3.4%	7	23.3%	
	Veliko Tarnovo	39	2.7%	2	3.5%	1	3.4%	0	0.0%	
	Vidin	7	0.5%	0	0.0%	0	0.0%	0	0.0%	
	Vratsa	10	0.7%	0	0.0%	0	0.0%	0	0.0%	
	Gabrovo	17	1.2%	1	1.8%	0	0.0%	0	0.0%	
	Dobrich	15	1.0%	0	0.0%	1	3.4%	0	0.0%	
	Kardzhali	7	0.5%	1	1.8%	0	0.0%	0	0.0%	
	Kyustendil	8	0.5%	0	0.0%	0	0.0%	0	0.0%	
	Lovech	7	0.5%	1	1.8%	0	0.0%	0	0.0%	
	Montana	9	0.6%	0	0.0%	1	3.4%	0	0.0%	
	Pazardzhik	24	1.6%	0	0.0%	2	6.9%	0	0.0%	
	Pernik	18	1.2%	0	0.0%	2	6.9%	2	6.7%	
	Pleven	29	2.0%	2	3.5%	0	0.0%	0	0.0%	
	Plovdiv	160	11.0%	5	8.8%	2	6.9%	4	13.3%	
	Razgrad	3	0.2%	2	3.5%	0	0.0%	1	3.3%	
	Ruse	27	1.9%	2	3.5%	0	0.0%	0	0.0%	
	Silistra	3	0.2%	0	0.0%	0	0.0%	1	3.3%	
	Sliven	14	1.0%	2	3.5%	0	0.0%	1	3.3%	
	Smolyan	12	0.8%	0	0.0%	0	0.0%	1	3.3%	
	Sofia region	22	1.5%	0	0.0%	0	0.0%	0	0.0%	
	Sofia capital	686	47.1%	11	19.3%	12	41.4%	9	30.0%	
	Stara Zagora	51	3.5%	3	5.3%	3	10.3%	0	0.0%	
	Targovishte	3	0.2%	1	1.8%	0	0.0%	1	3.3%	
	Haskovo	15	1.0%	1	1.8%	1	3.4%	0	0.0%	
	Shumen	16	1.1%	5	8.8%	1	3.4%	0	0.0%	
	Yambol	14	1.0%	0	0.0%	2	6.9%	2	6.7%	

Do you use a condom when you have sex?	No	105	7.2%	5	8.8%	7	24.1%	4	13.3%	<0.001*
	Rarely	292	20.0%	19	33.3%	14	48.3%	5	16.7%	
	Often	652	44.7%	23	40.4%	3	10.3%	11	36.7%	
	Always	409	28.1%	10	17.5%	5	17.2%	10	33.3%	
Do you use a condom when you have sex?	No/Rarely	397	27.2%	24	42.1%	21	72.4%	9	30.0%	<0.001
	Often/Always	1,061	72.8%	33	57.9%	8	27.6%	21	70.0%	
Do you use a condom when you have sex?	No/Often/Rarely	1,049	71.9%	47	82.5%	24	82.8%	20	66.7%	0.166
	Always	409	28.1%	10	17.5%	5	17.2%	10	33.3%	
Do you use drugs?	No	1,261	86.5%	50	87.7%	23	79.3%	24	80.0%	0.504*
	Yes, rarely	165	11.3%	7	12.3%	3	10.3%	5	16.7%	
	Yes, often	32	2.2%	0	0.0%	3	10.3%	1	3.3%	
Do you use drugs?	No	1,261	86.5%	50	87.7%	23	79.3%	24	80.0%	0.538
	Yes, rarely or often	197	13.5%	7	12.3%	6	20.7%	6	20.0%	
HIV status	Negative	697	47.8%	24	42.1%	5	17.2%	15	50.0%	0.01
	Do not know	761	52.2%	33	57.9%	24	82.8%	15	50.0%	
When did you last test for HIV?	Last month	65	4.5%	5	8.8%	1	3.4%	7	23.3%	<0.001*
	Last 3 months	129	8.8%	4	7.0%	1	3.4%	3	10.0%	
	Last 6 months	212	14.5%	3	5.3%	1	3.4%	1	3.3%	
	Last year	219	15.0%	5	8.8%	4	13.8%	1	3.3%	
	More than a year ago	386	26.5%	20	35.1%	6	20.7%	7	23.3%	
	Never	447	30.7%	20	35.1%	16	55.2%	11	36.7%	
When did you last test for HIV?	Never	447	30.7%	20	35.1%	16	55.2%	11	36.7%	0.033
	Last 12 months	625	42.9%	17	29.8%	7	24.1%	12	40.0%	
	More than 12 months ago	386	26.5%	20	35.1%	6	20.7%	7	23.3%	
HIV test	Have never tested	447	30.7%	20	35.1%	16	55.2%	11	36.7%	0.051
	Have tested at some point	1,011	69.3%	37	64.9%	13	44.8%	19	63.3%	
How do you prefer to test for HIV?	Free home test	902	61.9%	35	61.4%	20	69.0%	10	33.3%	0.141*
	Paid home test if there is no free	145	9.9%	4	7.0%	3	10.3%	6	20.0%	
	Health center	355	24.3%	15	26.3%	4	13.8%	12	40.0%	
	Mobile laboratory	56	3.8%	3	5.3%	2	6.9%	2	6.7%	
When did you last test for STI (except HIV)?	Last month	53	3.6%	4	7.0%	1	3.4%	6	20.0%	<0.001*
	Last 3 months	128	8.8%	5	8.8%	1	3.4%	2	6.7%	
	Last 6 months	191	13.1%	2	3.5%	2	6.9%	1	3.3%	
	Last year	225	15.4%	7	12.3%	2	6.9%	3	10.0%	
	More than a year ago	387	26.5%	13	22.8%	3	10.3%	7	23.3%	
	Never	474	32.5%	26	45.6%	20	69.0%	11	36.7%	
STI test	Have never tested	474	32.5%	26	45.6%	20	69.0%	11	36.7%	<0.001
	Have tested at some point	984	67.5%	31	54.4%	9	31.0%	19	63.3%	
When did you last test for Hepatitis?	Last month	49	3.4%	3	5.3%	1	3.4%	5	16.7%	0.002*
	Last 3 months	121	8.3%	3	5.3%	0	0.0%	4	13.3%	
	Last 6 months	178	12.2%	2	3.5%	3	10.3%	1	3.3%	
	Last year	177	12.1%	8	14.0%	2	6.9%	1	3.3%	
	More than a year ago	394	27.0%	14	24.6%	4	13.8%	8	26.7%	
	Never	539	37.0%	27	47.4%	19	65.5%	11	36.7%	
Hepatitis test	Have never tested	539	37.0%	27	47.4%	19	65.5%	11	36.7%	0.007
	Have tested at some point	919	63.0%	30	52.6%	10	34.5%	19	63.3%	

How did you learn about the campaign?										
Facebook	262	18.0%	7	12.3%	7	24.1%	8	26.7%	0.301*	
Grindr	851	58.4%	31	54.4%	15	51.7%	13	43.3%		
Instagram	200	13.7%	11	19.3%	3	10.3%	4	13.3%		
Single Step website	62	4.3%	4	7.0%	1	3.4%	2	6.7%		
Other	36	2.5%	1	1.8%	2	6.9%	3	10.0%		
Friend/Acquaintance/ Partner	47	3.2%	3	5.3%	1	3.4%	0	0.0%		

Age	p<0.003			
Bulgarian	N	Valid	1458	
		Missing	0	
	Median	29.00	29.00	
	Minimum	16	16	
	Maximum	62	62	
Turkish	N	Valid	57	
		Missing	0	
	Median	25.00	20.00	
	Minimum	16	16	
	Maximum	47	41	
Roma	N	Valid	29	
		Missing	0	
	Median	23.00	20.00	
	Minimum	17	16	
	Maximum	37	41	
Other	N	Valid	30	
		Missing	0	
	Median	28.50	20.00	
	Minimum	17	16	
			52 41	

Location		Ethnicity							
		Bulgarian		Turkish		Roma		Other	
		n	%	n	%	n	%	n	%
	Sofia capital	687	47.1%	11	19.3%	12	41.4%	9	30.0%
	Regional city with KABKIS	467	32.0%	16	28.1%	7	24.1%	10	33.3%
	Regional city without KABKIS	83	5.7%	8	14.0%	5	17.2%	3	10.0%
	Other small locations without KABKIS	221	15.2%	22	38.6%	5	17.2%	8	26.7%

	No/ Rarely use a condom	Often/ Always use a condom	Do you use a condom when you have sex?								p	Do you use a condom when you have sex?				
			No		Rarely		Often		Always			No/ Rarely		Often/ Always		p
			n	%	n	%	n	%	n	%		n	%	n	%	
Do you use drugs?	No		95	78.5%	273	82.7%	593	86.1%	397	91.5%	<0.001	368	81.6%	990	88.2%	0.001
	Yes, rarely		16	13.2%	46	13.9%	88	12.8%	30	6.9%		62	13.7%	118	10.5%	
	Yes, often		10	8.3%	11	3.3%	8	1.2%	7	1.6%		21	4.7%	15	1.3%	
Do you use drugs?	No		95	78.5%	273	82.7%	593	86.1%	397	91.5%	<0.001	368	81.6%	990	88.2%	<0.001
	Yes, often or rarely		26	21.5%	57	17.3%	96	13.9%	37	8.5%		83	18.4%	133	11.8%	
When did you last test for HIV?	Last month		1	0.8%	10	3.0%	38	5.5%	29	6.7%	<0.001	11	2.4%	67	6.0%	<0.001
	Last 3 months		9	7.4%	14	4.2%	75	10.9%	39	9.0%		23	5.1%	114	10.2%	
	Last 6 months		10	8.3%	34	10.3%	96	13.9%	77	17.7%		44	9.8%	173	15.4%	
	Last year		6	5.0%	40	12.1%	123	17.9%	60	13.8%		46	10.2%	183	16.3%	
	More than a year ago		30	24.8%	101	30.6%	173	25.1%	115	26.5%		131	29.0%	288	25.6%	
	Never		65	53.7%	131	39.7%	184	26.7%	114	26.3%		196	43.5%	298	26.5%	
	HIV test	Have never tested		65	53.7%	131	39.7%	184	26.7%	114	26.3%		196	43.5%	298	26.5%
	Have tested at some point		56	46.3%	199	60.3%	505	73.3%	320	73.7%		255	56.5%	825	73.5%	
When did you last test for HIV?	Never		65	53.7%	131	39.7%	184	26.7%	114	26.3%	<0.001	196	43.5%	298	26.5%	<0.001
	Last 12 months		26	21.5%	98	29.7%	332	48.2%	205	47.2%		124	27.5%	537	47.8%	
	More than 12 months ago		30	24.8%	101	30.6%	173	25.1%	115	26.5%		131	29.0%	288	25.6%	
When did you last test for STI (except HIV)?	Last month		2	1.7%	7	2.1%	37	5.4%	18	4.1%	<0.001	9	2.0%	55	4.9%	<0.001
	Last 3 months		5	4.1%	17	5.2%	69	10.0%	45	10.4%		22	4.9%	114	10.2%	
	Last 6 months		12	9.9%	28	8.5%	89	12.9%	67	15.4%		40	8.9%	156	13.9%	
	Last year		8	6.6%	40	12.1%	121	17.6%	68	15.7%		48	10.6%	189	16.8%	
	More than a year ago		28	23.1%	95	28.8%	180	26.1%	107	24.7%		123	27.3%	287	25.6%	
	Never		66	54.5%	143	43.3%	193	28.0%	129	29.7%		209	46.3%	322	28.7%	
When did you last test for Hepatitis?	Last month		1	0.8%	6	1.8%	28	4.1%	23	5.3%	<0.001	7	1.6%	51	4.5%	<0.001
	Last 3 months		8	6.6%	10	3.0%	71	10.3%	39	9.0%		18	4.0%	110	9.8%	
	Last 6 months		11	9.1%	29	8.8%	78	11.3%	66	15.2%		40	8.9%	144	12.8%	
	Last year		9	7.4%	33	10.0%	98	14.2%	48	11.1%		42	9.3%	146	13.0%	
	More than a year ago		25	20.7%	106	32.1%	178	25.8%	111	25.6%		131	29.0%	289	25.7%	
	Never		67	55.4%	146	44.2%	236	34.3%	147	33.9%		213	47.2%	383	34.1%	
HIV status	Negative		36	29.8%	109	33.0%	339	49.2%	257	59.2%	<0.001	145	32.2%	596	53.1%	<0.001
	Do not know		85	70.2%	221	67.0%	350	50.8%	177	40.8%		306	67.8%	527	46.9%	
STI test	Have never tested		66	54.5%	143	43.3%	193	28.0%	129	29.7%	<0.001	209	46.3%	322	28.7%	<0.001
	Have tested at some point		55	45.5%	187	56.7%	496	72.0%	305	70.3%		242	53.7%	801	71.3%	
Hepatitis test	Have never tested		67	55.4%	146	44.2%	236	34.3%	147	33.9%	<0.001	213	47.2%	383	34.1%	<0.001
	Have tested at some point		54	44.6%	184	55.8%	453	65.7%	287	66.1%		238	52.8%	740	65.9%	

		Ethnicity								p
		Bulgarian		Turkish		Roma		Other		
		n	%	n	%	n	%	n	%	
Do you use a condom when you have sex?	No	105	7.2%	5	8.8%	7	24.1%	4	13.3%	<0.001*
	Rarely	292	20.0%	19	33.3%	14	48.3%	5	16.7%	
	Often	652	44.7%	23	40.4%	3	10.3%	11	36.7%	
	Always	409	28.1%	10	17.5%	5	17.2%	10	33.3%	
Do you use a condom when you have sex?	No/Rarely	397	27.2%	24	42.1%	21	72.4%	9	30.0%	<0.001
	Often/Always	1,061	72.8%	33	57.9%	8	27.6%	21	70.0%	
Do you use a condom when you have sex?	No/Rarely/Often	1,049	71.9%	47	82.5%	24	82.8%	20	66.7%	0.166
	Always	409	28.1%	10	17.5%	5	17.2%	10	33.3%	
Do you use drugs?	No	1,261	86.5%	50	87.7%	23	79.3%	24	80.0%	0.093*
	Yes, rarely	165	11.3%	7	12.3%	3	10.3%	5	16.7%	
	Yes, often	32	2.2%	0	0.0%	3	10.3%	1	3.3%	
Do you use drugs?	No	1,261	86.5%	50	87.7%	23	79.3%	24	80.0%	0.504*
	Yes, rarely or often	197	13.5%	7	12.3%	6	20.7%	6	20.0%	
When did you last test for HIV?	Last month	65	4.5%	5	8.8%	1	3.4%	7	23.3%	<0.001*
	Last 3 months	129	8.8%	4	7.0%	1	3.4%	3	10.0%	
	Last 6 months	212	14.5%	3	5.3%	1	3.4%	1	3.3%	
	Last year	219	15.0%	5	8.8%	4	13.8%	1	3.3%	
	More than a year ago	386	26.5%	20	35.1%	6	20.7%	7	23.3%	
	Never	447	30.7%	20	35.1%	16	55.2%	11	36.7%	
HIV test	Have never tested	447	30.7%	20	35.1%	16	55.2%	11	36.7%	0.033
	Have tested at some point	1,011	69.3%	37	64.9%	13	44.8%	19	63.3%	
When did you last test for HIV?	Never	447	30.7%	20	35.1%	16	55.2%	11	36.7%	0.051
	Last 12 months	625	42.9%	17	29.8%	7	24.1%	12	40.0%	
	More than 12 months ago	386	26.5%	20	35.1%	6	20.7%	7	23.3%	
When did you last test for STI (except HIV)?	Last month	53	3.6%	4	7.0%	1	3.4%	6	20.0%	<0.001*
	Last 3 months	128	8.8%	5	8.8%	1	3.4%	2	6.7%	
	Last 6 months	191	13.1%	2	3.5%	2	6.9%	1	3.3%	
	Last year	225	15.4%	7	12.3%	2	6.9%	3	10.0%	
	More than a year ago	387	26.5%	13	22.8%	3	10.3%	7	23.3%	
	Never	474	32.5%	26	45.6%	20	69.0%	11	36.7%	
When did you last test for Hepatitis?	Last month	49	3.4%	3	5.3%	1	3.4%	5	16.7%	0.002*
	Last 3 months	121	8.3%	3	5.3%	0	0.0%	4	13.3%	
	Last 6 months	178	12.2%	2	3.5%	3	10.3%	1	3.3%	
	Last year	177	12.1%	8	14.0%	2	6.9%	1	3.3%	
	More than a year ago	394	27.0%	14	24.6%	4	13.8%	8	26.7%	
	Never	539	37.0%	27	47.4%	19	65.5%	11	36.7%	
HIV status	Negative	697	47.8%	24	42.1%	5	17.2%	15	50.0%	0.01
	Do not know	761	52.2%	33	57.9%	24	82.8%	15	50.0%	
STI test	Have never tested	474	32.5%	26	45.6%	20	69.0%	11	36.7%	<0.001
	Have tested at some point	984	67.5%	31	54.4%	9	31.0%	19	63.3%	
Hepatitis test	Have never tested	539	37.0%	27	47.4%	19	65.5%	11	36.7%	0.007
	Have tested at some point	919	63.0%	30	52.6%	10	34.5%	19	63.3%	

		n	%
Did you take the test?	Yes	332	100.0%
What was the result?	Negative	315	91.6%
	Invalid	17	4.9%
	Positive	12	3.5%
How do you evaluate the entire process from order to testing?	Very easy	279	84.0%
	Easy	46	13.9%
	Neutral	5	1.5%
	Difficult	1	0.3%
	Very difficult	1	0.3%
How do you evaluate the entire process from order to testing?	Very easy/easy	325	97.9%
	Neutral	5	1.5%
	Very difficult/difficult	2	0.6%
How do you evaluate the entire process from order to testing?	Very easy/easy	325	97.9%
	Neutral/Very difficult/Difficult	7	2.1%

		How did you evaluate the whole process from order to testing?				p
		Very easy/Easy		Neutral/Very difficult/Difficult		
		n	%	n	%	
What was the result?	Negative	311	95.7%	4	57.1%	0.003
	Invalid	14	4.3%	3	42.9%	

		What was the result?		Total
		Negative	Invalid	
How do you evaluate the entire process from order to testing?	Very easy	269	10	279
	Easy	42	4	46
	Neutral	3	2	5
	Difficult	1	0	1
	Very difficult	0	1	1
Total		315	17	332

		What was the result?		Total
		Negative	Invalid	
How do you evaluate the entire process from ordering to testing?	Very easy/easy	311	14	325
	Neutral/Very difficult/Difficult	4	3	7
Total		315	17	332

SINGLE
STEP